GLEANINGS IN BEE CULTURE

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EDITORIAL

By E. R. ROOT.

THE EDITOR OF THE REVIEW RECOVERING FROM AN OPERATION.

WE are very sorry to learn that Mr. W. Z. Hutchinson, the editor of the *Bee-keepers' Review*, had to undergo a rather serious operation at the Hurley hospital in his own city. A card received from his wife informs us that he has been doing well, and was expected home soon. The *Review*, in consequence, will be somewhat late.

WINTER KILLING OF CLOVER.

OUR neighbor, Mr. Adam Leister, who reported last winter such an abundance of clover on his own and adjoining farms in spite of the drouth of last fall, now reports that much of it "seems to be gone." He says it is impossible that the drouth could be responsible for this, but that it is, rather, due to winter-killing as a result of the exposure during the bad weather with very little protecting snow. Another neighbor, Vernon Burt, about three miles west, reports that he never saw clovers more abundant nor better prospects for a heavy clover flow.

WHAT IS THE MATTER WITH ILLINOIS?

INDIANA and Iowa have recently enacted foulbrood laws. Michigan has long had one on the statute-books, and some two or three years ago amended it to make it more effective. Illinois has had a law for a number of years, but it is practically a dead letter Efforts have been made in the State to amend the law, time and again; but there are always some three or four bee-keepers who use their influence to defeat it. If these men have any good reason for opposing legislation urgently needed by bee-keepers of their State, we shall be glad to give them space for a general statement of their views in our columns; but we shall reserve the right to let some friend of the measure reply.

THE TOWNSEND SERIES OF ARTICLES FOR BEGINNERS.

IT is seldom that we run across a series of articles that contain more valuable information than those now running in these columns from the pen of E. D. Townsend. If any of our readers have failed to read the first of the series, designed especially for beginners, whether veteran or not, he will do well to go back to the first one and read them consecutively until the present. The first article was published in our issue for March 15th, page 160 The article in the present number is especially seasonable and valuable. While much in it is not new to the veteran, yet there is a large amount of corroborative experience that will do that same veteran a lot of good.

A THREE-HUNDRED-COLONY APIARY NEARLY DESTROYED BY SPRAYING FRUIT TREES IN FULL BLOOM.

WE have just received a letter from O. B. Metcalf, Mesilla Park, N. M., who says he fears he will lose nearly his whole apiary of 300 colonies simply because his fruit-growing neighbors sprayed arsenate of lead on their trees, presumably while they were in full bloom. His bees, he says, are dying by the thousand. He wishes to know whether the combs containing the fruit-bloom honey from which his bees have died can be given to normal colonies.

We have written him that he had better have some of that honey analyzed to determine the amount of poison, if any, there is in it and render us a report. There is an abundant need of "educating" the fruit-grower in many localities yet. Many of them are practicing spraying while the trees are in bloom.

AN INTERVIEW WITH A PROMINENT COMMISSION MAN OF NEW YORK CITY; HOW HONEY-PRODUCERS MAY BETTER PROTECT THEIR OWN MARKET; DR. MILLER'S HONEY IN NEW YORK.

WE recently made a hurried business trip to New York city; and while there we took occasion to interview Mr. Segelken, of the firm of Hildreth & Segelken, the well-known honey merchants of that city. Fortunately we happened to find Mr. Segelken quite at leisure, standing in front of his place of business, on the corner of Murray and Greenwich streets.

"Is this Mr. Segelken?"

"It is."

"This is E. R. Root, of Medina."

"Come in, Mr. Root."

In less time than it takes to tell it we fell to discussing the honey business in general.

"How is the market?" we asked.

"A little slow."

"How do you think it is going to compare this season with last year?"

"We do not expect prices to be quite as good."

"Why?"

"Because there was a big crop last year, and a lot of it will be left over; and prospects for another big crop are very favorable. Unfortunately, also, bee-keepers dumped their odds and ends on the market after the selling season was over, and we find it in a bad way as a consequence. "Look

here," he said, pointing to a lot of discolored and broken comb honey dripping and leaking. "The shipper of those goods sent them without any notice whatsoever; the market was glutted, with no demand for such stuff hardly at any time; and the producer expects us, of course, to give him quick returns at good prices at this off season. Of course, we will do the best we can. Now," he continued, directing our attention in another direction, "look at these goods over here. *These* will sell. They are first class. Do you recognize the product?"

"Why, no," we replied.

With a look of satisfaction he said, "That is Dr. C. C. Miller's honey. While he shipped to us a little late, it will sell, while this other stuff," pointing to the first-mentioned lot, "will drag and drag and drag, and we shall have a dissatisfied customer. It is too bad that there are not more bee-keepers like Dr. Miller who know *how* to grade and do it honestly. Let's take a look at his honey."

So saying he opened up two or three cases, remarking, "These sections are all clean, well scraped, and you can pick out a box anywhere in the center of the crate, and it will look just as nice as that immediately in front of the glass. That is what I call square dealing. I like to do business with men like that. Why, that fellow," pointing to the lot of bad honey—"well, I feel sorry for him. Say, Mr. Root, don't you know there are a good many more just like him? They will wait till the selling season is over, dump all their odds and ends on us, without first writing to see if we can handle them to advantage, and then complain because we can not make an immediate return. Why, some of this stuff is candying now. Sell it? Yes, of course, we can get *some* price; but that would not please the producer, and he would be likely to write to the editor of GLEANINGS, complaining of the unfairness of Hildreth & Segelken."

As he said this his eyes traveled backward toward the Dr. Miller honey, remarking,

"What a contrast!"

We then strolled over to his desk, where Mr. Segelken explained some of the deals he had been having with the bee keeping public, telling some of the difficulties of the business, where a commission man was unjustly censured for conditions that were beyond his control; or where, again, he was simply pursuing ordinary business methods. For example, he referred to a case where a producer had shipped him a large amount of honey; and as it arrived out of the selling season he had to store it till the market opened up again. As his own warehouse was filled up he had to put it outside. Well, in the course of a few months he made his final returns, charging storage and insurance. Mr. Honeyman was very much dissatisfied. He had given Mr. Segelken no authority to charge storage and insurance.

"Now," said Mr. Segelken, "what could I do? I could not put the goods in our own warehouse, as we simply had not room for them. Somebody had to pay storage; and as Mr. Honeyman took the liberty of sending his honey at the wrong season of the year, it had to be held until the market rose. Suppose there had been a fire—wouldn't there have been a howl from Mr. Honeyman because I did not look after his interests by insuring the goods? But there was no fire, and Mr. Honeyman was very much put out because he had to pay a small insurance. This is the kind of thanks we get sometimes for trying to protect our clients' interests."

Mr Segelken mentioned a good many cases of a similar nature. He had no complaint to make of bee-keepers in general, except that many of them are unbusinesslike, because of their unfamiliarity with business methods, often pursuing policies that tend to break down their own market. He told how a producer would divide his shipment of honey between two or three different merchants in the same city, and how all three of those merchants would, as a matter of course, put those same goods up in competition with themselves; whereas if the bee-keeper had consigned all to one reliable house the best price possible would have been secured.

Hildreth & Segelken no doubt do the largest honey business in New York and perhaps in the whole East. While there have been occasional complaints, and while it is possibly true that they have erred at times in the matter of adjustment, yet when we take into consideration the immense volume of their business, their record is good. Indeed, we do not know how any house, however honest it may be, can fail to run against some of these unbusinesslike methods, and, as a natural result, have some complaints filed against them.

THE NEW CORRUGATED STRAWBOARD SHIPPING-CASES.

We asked Mr. Segelken if he had had any experience in receiving or shipping comb honey in the new corrugated strawboard shipping-cases that have recently been figured in the columns of GLEANINGS. He said he had not; but he saw no reason, from the general construction of them, why they would not very materially reduce the breakage and leakage of combs in transit.

He explained that comb honey in ordinary wooden shipping-cases should be put up in carriers; that it is very risky to ship such cases in single lots, either by freight or express. We went on to explain to him that these new corrugated paper cases would cost only a trifle more than the wooden cases, and how, from some tests that have been made, honey would go through in them to destination, without breakage or leakage. He seemed to be very much interested; and the result of our interview was that we agreed to ship him a 24-lb. case of comb honey in one of these new corrugated shipping-cases by express. As soon as the goods are received he is to examine them, put them back in the case, if not damaged, and express back to us. Our readers will get the result of the test later.

BEES KILLED BY TELEPHONE WIRES.

JUST as the honey-flow comes on from fruit-bloom we observe again as we did last season, and for almost every season before when the bees were flying heavily, that numerous bees are dead and dying on the sidewalks in front of our factory buildings. In some cases the abdomen is separated from the thorax of the bee, for, in the death-struggle, the sufferer crowds at the rear portion of its body until it dismembers itself.

Our readers will remember that, a year or so ago, we were at a loss to account for so many

dead and dying bees, when Mr. L. A. Aspinwall, of Jackson, Mich., the man who got up the non-swarming hive, asked if there were not a good many telephone or telegraph wires in the direct line of the bee flight. This is exactly what we do have directly over our sidewalks. While we have not seen the bees strike the wires and then drop down, the fact that the dead and the dying are seen only under these wires, and nowhere else, would seem to prove that Mr. Aspinwall has hit on the true solution of the trouble.

A REMARKABLE FLOW FROM FRUIT-BLOOM.

IN this locality, at least, this is proving to be a remarkable fruit-bloom season. The weather has been very warm, and fruit-trees of all sorts are now out in all their glory. The bees have been roaring on the trees just about as they do during a basswood flow. Moreover, the dandelions are showing up strong everywhere. From these, bees are gathering both honey and pollen. All the hives are being filled with honey, and many colonies are showing swarming-cells. It will be strange if we do not have at some of our outyards some runaway swarms.

That this condition prevails in other northern and central States is probably true if we can judge from the correspondence coming into our office. If this is true it will put bees in fine condition for the clover and basswood flow.

Reports are somewhat conflicting as to whether there will be much clover in blossom this season or not. The conditions of weather have certainly been ideal this spring, as there has been a large amount of rain and warm weather. If this is not followed later by a drouth and cold weather we shall probably get a flow of honey.

DO NOT SHIP DARK HONEY WITHOUT FIRST WRITING.

THE following, just received from Mr. F. W. Muth, of Cincinnati, a buyer of honey at that point, will explain itself:

We received last week a shipment of five carriers of comb honey from Georgia. The quality of this honey is any thing but what pleases a buyer. Most of it is as dark as the darkest buckwheat, with a strong flavor. It is nicely packed in no-drip shipping-cases, and also came through in first-class condition.

Why a producer of honey will raise dark comb honey and send it to a highly developed market like Cincinnati, and expect any kind of price, is beyond comprehension. Comb honey that a developed market will take must be fancy, or at least a No. 1 grade; and any other grade than that is a detriment to business in the comb-honey line.

This shipper will be sadly disappointed, for we wrote him to send us shipping instructions and money for the amount we advanced in freight, so that we can ship it further, as this market will not take it any price, neither would we. We would not dare thus to endanger our trade.

It might be well in your position to warn bee-keepers at this time of the season not to ship dark comb honey to any market, as it is only a detriment to the business in general.

Cincinnati, May 5. FRED W. MUTH.

There are some markets that will accept dark honey. Albany and New York will take almost any quantity of buckwheat; but it would be folly to ship buckwheat or any other dark honey to Cleveland or Cincinnati, or any city further west, without first writing to see what the market can take, and at what price. We take it that the honey referred to above was shipped without previous notice or inquiry as to whether Mr. Muth could accept it; and while we are about it we believe it is always bad policy to ship any kind of honey, light or dark, to any market without first making general inquiries.

If the party above mentioned had shipped his honey to Albany or New York he would have obtained a better market; but even then the freight would have been excessive, and he probably would have been very much disappointed with the returns. As a general thing the dark honey in the western and southern portions of the country should not be allowed to go into sections. There is no market for it in such shape.

CONDITIONS IN CALIFORNIA INDICATE NOT MORE THAN HALF A CROP.

THE following letter from J. W. George, and the reports from the various bee-keepers in California, indicate that, unless good weather comes very soon, that State can not expect much more than half a crop, and possibly not that. It is to be hoped that the bright days may come before it is too late.

Mr. Root:—You will find enclosed a number of crop reports from bee-keepers of Southern California. I consider the aggregate of these a fair and representative report of their section. These reports are not from 2×3 bee-keepers, but men of large interests and long experience in their several sections. I did not ask for these reports for publication; but as they are all so nearly unanimous I feel that the facts had better be known. Prevailing winds are injuring us quite a good deal now in this valley.

Imperial, Cal. J. W. GEORGE.

J. W. George:—Yours of the 2d is at hand. Prospects for a crop here are not very good. There will not be any extracting before the 15th or 20th of this month, and then only about half of my apiaries will be ready. Bees are very weak, and building up slowly. With even favorable weather the crop will be very light here, and still worse nearer the coast. I know a lot of apiaries that have dwindled down to less than half what they were last year. L. E. MERCER.

Ventura, Cal., May 4.

Friend George:—Yours was received to-day. I hardly know what to advise you. It is cool, and oranges are blooming and giving some honey, although nothing big. If we get half such a crop as we had four years ago, I think we shall be more than satisfied. Of course, if we get some good rains this month we might make half a crop over the country. We intend to hold for six cents for white honey. L. D. ANDREWS.

Corona, Cal., May 4.

Mr. George:—You have asked me just what I want to know myself; and if conditions are the same elsewhere as here, and stay this way all summer, honey will be scarce, as it is fog in the morning, fog for dinner, and sometimes for supper; and bees must make honey and eat it up at night, for it is cold unless one is at work faster than I can move. The report from my bees is, lots of bees in the hives, and big swarms, but only just begun to take in any surplus, and since then it is cold again, which means, I think, that we shall have a hot summer and hot winds and no honey; but I have not heard a conjecture from any bee-man since the rains quit. BERT.

Pasadena, Cal., May 5.

Bees are no stronger now than two months ago. I do not count on over half a crop—100 cold, and hardly any swarms. If it does not soon get warmer we shall not have over one-fourth to one-third of a crop; but to-day is better than we have had for the season, which is too far advanced, and bees are not strong enough to get a good crop. We ought to get a good price—5½ to 6 cents. M. H. MENDLESON.

Piru, Cal., May 5.

J. W. George:—My bees are doing well. I had about 150 stands, and have 50 new swarms; have taken about 1500 lbs. of honey. Perhaps 600 lbs. is old honey. I did not get a pound of surplus last year, so the bees came through with plenty. I have extracted only a part of them. I hope to go over them in a few days more. I think I shall get a fair crop this year. The weather is good now. W. E. LITTLE.

Perris, Cal., May 9.

STRAY STRAWS

By DR. C. C. MILLER, MARENGO, ILL.

GERMAN BEE JOURNALS number 27. With only three in this country we manage to get along nicely, thank you.

THOSE FLAPS flopping about on the new paper cases will be in the way on the counter—or elsewhere. As the new kind costs 9 per cent more than the Crane, the Crane is likely to win out. Still, there's that stickerless business. A woman says, too, that the side of the latter case looks neater.

The *British Bee Journal*, 99, says of the Silver bottom-board with its "3-in. air-space for wintering or for giving extra ventilation in hot weather to prevent swarming," that "a queen-excluder below the brood-nest in summer will prevent comb-building." If an excluder will do it, a much cheaper rack ought to do it as well. Mind you, there's a three-inch space.

MY OPINION—I think the common opinion—has been that, on the same journey, a bee gathers both pollen and nectar. So high an authority as Gaston Bonnier says that the same bee gathers only pollen or only nectar or only water or only propolis. [Our bees are busily working on dandelions. We can see the pollen in little lumps hanging to their legs, while their abdomens are very much podded out, indicating that they have gathered considerable honey at the same time. If both honey and pollen are present in the same blossom it would seem very strange if the bees ignore the honey and take *only* pollen.—ED.]

J. E. CRANE, I've been trying to get the answer to your question about per-capita consumption of honey in the United States. Dr. E. F. Phillips estimates production of comb honey at 60,000,000 to 75,000,000 pounds, and of extracted at three or four times as much—say 67,500,000 comb and 3½ times as much extracted, and we have a total of 303,750,000 pounds. Divide that among 80,000,000 people, and each one gets 3.797 pounds. If he consumes the modest amount of 2 oz. at a meal he will eat honey 30⅜ times in a year, or once every 12 days. Corrections must be made, however, for exports, imports, honey used in manufactures, etc. Exports and imports nearly balance (in the last eight years imports were 15 per cent more than exports in *value*); but manufactures, etc., may cut down the allowance considerably below the 3.797 pounds.

SWAN ANDERSON, thanks for reporting failure with splints, page 320, and especially for telling why you failed. You left one-inch space between foundation and bottom-bar, and, of course, the bees would gnaw those barelegged splints below the foundation, and, having started, they kept on half way to the top-bar. Please try letting foundation come clear to the bottom-bar. I hope that others who have had failures will report them, and *why*. [It would be interesting and valuable if we could get reports from others who have used Dr. Miller's splints to stay up foundation. Have they or have they not been satisfactory? Thousands and thousands of these splints have been sold. It is reasonable that, where they have given satisfaction, the user of them has not thought it necessary to make a report. But when one is dissatisfied with them it would be natural for him to say so in the bee-journals. Let us hear from both crowds.—ED.]

THE *Schweizerische Bztg.*, 58, gives an interesting page of winter consumption at the 34 Swiss stations. For ten years the average annual consumption per colony for November was 1.56 lbs.; December, 1.51; January, 2.1; February, 2.84; March, 4.54. Total, 12.5 lbs. for 5 months. Note how consumption increases after November, being 43 per cent more in the last two months than in the first three months; March just three times as much as December. At the different stations, the five months' consumption of honey varied from 6 to 21.5 lbs. But 13.35 of that last 21.5 was in March alone, caused by stimulative feeding. [These figures are indeed valuable, and, so far as we can remember, they conform in the main to the recorded experiments made in this country.—ED.]

LET ME ADD a little to the excellent instructions of Bro. Doolittle for finding a queen, page 300. If you don't find the queen on the second time going over the frames, it sometimes happens that you'll not find her if you keep on for half an hour. I don't know whether she is hidden in a cell, or what is the matter; but at any rate you can't get a sight of her. Just close up the hive for half an hour, or until another day, and you may find her the first thing. But sometimes it happens that, for some reason, you just *must* have that queen before any thing else is done. In that case put the frames in pairs. Put a pair of frames close together in the empty hive-body beside your hive, the pair crowded close together, but an inch or two away from the hive-wall. Then, leaving a space of an inch or two, put in another pair. Arrange the combs in the hive also in pairs the same way. Now you've only half the ground to look over, for it's morally certain that the queen will be in the middle of one of the pairs. Lift out the frame nearest you of each pair. As you do so, glance over the nearest side of the frame left in the hive, and then quickly search the further side of the frame in your hands. Another thing, if your pairs are well apart, and you let them stand long enough, the bees will remain quiet on the pair where the queen is; the others will be uneasy. You may also sift the bees through an excluder set over a hive containing one or more frames of brood. Put a hive-body over the excluder, and brush the bees into it. They will go down, leaving the queen above the excluder. If your queen is clipped, brush all the bees on to a sheet or into a hive some distance away. Smoke a little, and the bees will fly back to their home, the clipped queen remaining. [We have tried the scheme here outlined by Dr. Miller, time and time again, and it works just as he says. There are many of these little kinks of the trade that are not in any of the standard text-books. We hope to have in the next edition of the A B C book many of these kinks incorporated; indeed, we have marked this very subject to go in the next edition. Say! it won't do any harm to have the subject discussed now. Let's compare notes. We will gladly grant space for them.—ED.]

GLEANINGS FROM OUR EXCHANGES.

By W. K. Morrison, Medina, O.

Some time ago the United States Reclamation Service decided to irrigate 100,000 acres near Grand Junction, Colo., by means of a high-line canal. Now a private concern announces it will undertake to supply water for 250,000 acres more. If this means any thing it indicates more alfalfa honey for the effete East. But the Coloradoans are—for selling it. They should eat it.

President Taft, on his western tour, will have the pleasure, if all goes well, of turning on the water at the Gunnison tunnel, near Montrose, Colorado. Such works mark a new era in the history of Western agriculture, and, incidentally, of bee culture.

This is not buncombe, for the Reclamation Service has already constructed 16,000 miles of concrete-lined canals, many of very large capacity.

Some time ago Gleanings alluded to the fact that the glucose trust would soon have to deal with a very active competitor. This is now an accomplished fact. A company has been formed with a capitalization of $7,000,000, and several factories have been engaged. The Royal Baking Powder Co. is behind this move. The headquarters will probably be at Roby, Indiana. Had Dr. Wiley been allowed to have his way this enterprise would, in all probability, have never been started. Look out for "Honey-Drips," etc.

THE WAR SCARE IN AUSTRALIA.

The Federal Independent Bee-keeper has imbibed the war microbe, and is devoting space to a consideration of Australian defense from imaginary enemies. Our friends may take heart of grace when they hear the United States nation has never yet been attacked. In all our wars we were the aggressors. Even if our navy were one-fourth its present size we bee-keepers would lose no sleep over the fact. The Dreadnought scare looks ridiculous to us at this distance.

In our case, at least, it would pay better to spend our money on internal improvements, agriculture, postal service, and other business needs than on warships.

ATTACK THE PURE FOOD LAW.

The Corn Products Company, of Chicago, attacked the constitutionality of the pure-food law in an answer filed on Saturday last in the United States District Court in Cincinnati to the allegations of United States District Attorney McPherson, who a few days ago caused the United States Marshal to seize 46 packages and bags of sugar manufactured by the Corn Products Company and found on the premises of the Gerke Brewing Company in that city. The government alleged the sugar was labeled "pure sugar," whereas it was adulterated.

The Corn Products Company admits the label, but denies the sugar was adulterated. As a defense the company declares the seizure was illegal because the pure-food law is unconstitutional for the reason that "the Congress of the United States has no power under the constitution of the United States to enact the pure food and drugs act."

The company attacks the constitutionality of section 10 of the pure food and drugs act on the ground that "the section contains provisions that are unreasonable, and the section provides for unduly oppressive measures, and deprives citizens of their property by harsh and unusual means.—*American Grocer.*

No comment is necessary.

SPEAKER CANNON AND PARCELS POST.

James L Cowles, secretary of the Postal Progress League, has this to say:

I had an interview with the Speaker, and found him in a vigorous state of mind, opposed to all our reforms. The salary of the average rural free-delivery carrier last year was $865. His average earning for the government was $132, leaving a deficit, when we merely consider the cost and the return, of $733 a route, or of $29,000,000 for the entire country. Our proposition for an amendment of the postal laws so as to permit him to carry parcels up to one cubic foot in size, increasing his earning power and making a source of revenue to the government, had no attractions for the Speaker. Whatever is done in increasing the efficiency of the parcels-post service must be done over the opposition of Mr. Cannon.

THE PATHFINDER DAM; A FINE TERRITORY FOR BEES.

The Reclamation Service of the federal government recently accepted from the contractors the Pathfinder dam in Wyoming, which foreshadows an early completion of the North Platte irrigation project. The dam will store one million acre-feet every season, and irrigate a splendid country for general crops, particularly alfalfa. These lands lie alongside the old overland trail for a distance of 250 miles. From the reservoir to the lowermost end of the irrigated tract is a distance of 500 miles. The dam was named in honor of Capt. John C. Fremont, the pathfinder. It is situated 50 miles southwest of Caspar, Wyoming. It is not the highest dam, but it is 215 feet in height. Homesteads are available in areas of 80 acres each. The charge for the water is $45, payable in ten annual installments without interest.

THE AMERICAN SYSTEM IN EUROPE.

The Austrians seem to be breaking away from the German system of bee-keeping. Recently they adopted as the standard frame of the country a modification of the Langstroth, known as the Dadant-Blatt. This puts Austria in line with France, Belgium. Nederland, Switzerland, Italy, and Spain, where this frame is the recognized standard.

There is also a tendency to copy American methods At the bee-keepers' congress held at Vienna-Neustadt, Mr. Alfonsus, the very able apicultural editor, of Vienna, took up the cudgels in behalf of Pratt's system of queen-breeding, of which he is a partisan. The Germans present seemed to think the American system too complicated, and that for the average bee-keeper, getting a few queens during the swarming season, was good enough for them yet awhile.

It is with considerable pleasure I note that in the Scandinavian countries of Denmark, Norway, Sweden, and Finland the bee-journals recommend American methods. It is the same in Russia, where there are several excellent bee-journals. They do not seem to favor German ideals at all; on the contrary, they delight in favoring our methods. They have caught on to Mr. Hand's system in Russia, and the factories make and sell his hive.

NOTES FROM CANADA

By R. F. Holtermann.

CLOVER PROSPECTS IN CANADA GOOD.

So far as I can learn, white and alsike clover have come through the winter in excellent condition, and, although late, promise well. In my experience a cold and wet spring is likely to be followed by a dry summer; but for the last eight months it has not been safe to foretell weather.

LOCUST AND BASSWOOD PLANTING IN CANADA.

W. K. Morrison, p. 265, refers to the locusts as honey-yielders. Mr. E. J. Zavitz, who has charge of forestry work in Ontario, has the locust and the basswood tree on his list for planting. As many thousands of acres are to be planted under the Ontario government, Prof. Zavitz's decision will be of interest to bee-keepers.

INOCULATION FOR ALFALFA.

Before me lies a circular sent out by the Michigan State Agricultural College. The subject is "Inoculation with Nodule-forming Bacteria." The difference between the plants treated and not treated with the bacteria is simply astonishing. Can it be that the failure of alfalfa to yield honey in Ontario is due to the lack of inoculation? This has already been suggested as the cause. Why could not our provincial government conduct some experiments in this direction?

QUEENLESS COLONIES AND WORKER COMBS.

Doctor Miller, I am inclined to believe you are correct when you say "queenless bees will build worker comb if weak enough." I see now in *L'Apiculture Nouvelle*," Paris, France, that the editor says that I am too positive. I can not say that I have a great desire to have experience with queenless colonies, but I do remember instances where I decided a colony was queenless, shook the bees from the combs, and left them in the hive. These bees built worker comb, and I decided there must have been a mistake. I can even remember hunting for queens which I was unable to find. Thanks for this information. I am glad to be corrected.

IS A HIVE THAT CARRIES IN NO POLLEN QUEENLESS?

There is another statement made in this connection, and that is that a queenless colony does not gather pollen. If so, how can we tell that a colony is queenless for any length of time by the pollen-clogged combs? [You can't. The statement, as we remember it, has to do with pollen-carrying bees, and not with pollen in the combs. If, for example, here is a hive where the returning bees are not carrying in pollen while the other bees are, it is claimed that such hive is queenless. We should like to inquire how generally true this is.—Ed.]

THE LONDON CONVENTION IN CANADA; OUTDOOR-WINTERED COLONIES FURTHER ALONG.

The Middlesex Bee-keepers' convention at London, May 1, was a great success for a county convention. At least forty were in attendance, with the president, Geo. Kimball Reeve, of London township, in the chair. The winter losses were only between 5 and 10 per cent, probably not exceeding the former figure. Those bees that had been wintered outside and packed had in some instances increased in strength during the winter, but they had also consumed an unusual amount of stores. The members pretty well agreed that, owing to the cold, wet, and backward spring, there was an unusually small quantity of brood in the hive. Those who had packed their bees and wintered outside were the more fortunate.

THE SENSE OF SMELL IN LOCATING FOUL BROOD IN A HIVE.

W. A. Chrysler, Chatham, Ont., one of the foul brood inspectors, stated in a conversation with me that to him the sense of smell is a wonderful help in detecting the disease. He remarked that he had been very successful in diagnosing the disease in this way. Most of those who have any thing to do with foul brood know the peculiar odor emanating from the putrid matter resulting from the action of the foul-brood germ upon the larvæ of the bees, and Mr. Chrysler referred to this, stating that, when once the bee-keeper became acquainted with the smell, it is unmistakable. He had tried to detect the odor by removing the quilt; but unless in advanced cases he had not succeeded in detecting the disease by this method. He had, however, been successful with only five diseased cells in the hive by the following plan: He went to the hive, and, without disturbing or smoking the bees, and with a veil on his face, he put his nose to the entrance of the hive, and through his nose drew in a long breath, and in this way he had been able to detect the disease with only five or six cells diseased in the hive. [We have detected foul brood in the same way. We located a colony once in this manner when we could find only one diseased cell; but we have never found that entrance diagnosis was reliable. It is, however, a great aid in locating affected colonies.—Ed.]

THE ODOR OF A QUEENLESS COLONY.

Mr. Chrysler also stated that he could detect by odor a colony which has been queenless for some time. He said that the colony which has uncapped worker brood has an odor which a colony without such brood does not have. It had taken a good deal of practice to make this method a success, but he had finally succeeded. Mr. Chrysler gave as a parallel a nest of puppies. One with experience can tell without seeing or hearing, but by odor, that the nest is here or there. So worker brood has its distinct odor.

It is now some years since, in Gleanings, I advanced the theory that bees single out queenless stocks and rob them, not because the bees in queenless colonies have less courage, but because the odor is not the same. Mr. Chrysler surely endorses that theory, and has made practical use of it. At the close of the conversation Mr. Chrysler stated, "I would not care to get up in public and make these statements, for I should expect to be attacked; but they are, nevertheless, true." I think that this information is too valuable to remain hidden.

BEE-KEEPING AMONG THE ROCKIES.

By Wesley Foster, Boulder, Col.

HIVE-SIDES OF TWO PIECES.

I notice the business manager says that, in future, hive-sides will be of two pieces to get clear lumber. With the sun as it shines out here, I am wondering what the effect will be. It is impossible to keep two boards true with each other, no matter what the joint. A few knots would be preferable to two-piece sides, I should think. We will wait and see.

COVERS.

Seldom do I see a wood cover that will keep the sections absolutely dry. A new Colorado cover with inner cover will do it, but two or three seasons will loosen things so a driving storm will force enough water through to wet the sections. The honey-board or inner cover with the Colorado cover does well; but the only safe cover for comb-honey producers is the tin cover with inner cover. Many times I see berries in mildewed boxes, but I never like to buy them. I am always looking for molded berries in these boxes, and sometimes they are found. A mildewed section or one badly stained is just as bad, and should never be found in the No. 1 grades.

The grading of our comb-honey crop begins when we fold and starter the sections, and continues through every operation, from piling in the stack of supers, hauling to the bee-yards, down to nailing on the cover of the finished case of comb honey.

To insure proper filling, a starter running clear across the top and bottom should be used. The bottom starter should not be over half an inch wide, so as not to bend over. Have the top starter as wide as can be afforded, and see that the ridge of wax runs along the whole length of the joint of the foundation with the wood. This is the only sure way of knowing that the starter is fastened.

SAVING WEAK COLONIES.

Dandelions are helping out in the way of pollen very plentifully this year, and we never have too much pollen in this country.

Old bees have been all our hives afforded, and the cold late spring has retarded brood-rearing so that a high percentage of the bees are very weak. The lack of a fall flow prevented the bees from breeding late in 1908, and that caused some of the trouble.

Mr. Harry Crawford, of Broomfield, has succeeded in building up these weak colonies, even when there were but a few hundred bees, by taking frames of bees from a strong colony and shaking at the entrance of the weak one. The young bees run in and are accepted, and do not kill the queen while the old bees return to their hive. If this is done on a cold or cloudy day the old bees are likely to enter and kill the queen Fifty or more hives were so treated and saved from complete loss, and Mr. Crawford considers it a very profitable move. This would not work if the queen were inferior; but conditions this spring are not the fault of the queens.

For the last five years very little honey has been stored from the first bloom of alfalfa. Before that it was common to have the flow begin June 1 to 10. Now it begins from June 15 to July 1. For several seasons our springs have been very backward, and then the alfalfa is not making such a luxuriant growth, and is cut sooner. If some comb honey can be taken off July 4 we are glad. This spring has been very backward, and an early surplus is hardly to be expected.

THE PREMIUM JAR.

The objection to the Mason jar for honey is that the cap will not hold the honey. When the jar is tipped, some of the honey follows the thread downward and comes out where the cap and rubber press against the jar. No matter how tightly the cap is screwed on, the honey will leak out.

The Premium jar doubtless remedies this fault. There are some objections to it, however. First, the cost is from 75 to 100 per cent higher than the Mason jar. The pint Mason jars cost here from 40 to 60 cts. per dozen, while the Premium jar (pint) costs 80 cts. per dozen, or 72 in gross lots. The glass cap is not the best thing for shipping, though with a well-made case it would ship safely.

Another objection is, the jar looks smaller because of the diameter being great and the height small. I do like the straight sides of the jar; and if it were tall and thinner it would sell better with honey in, but would not be so serviceable for fruit.

PACKING FRUIT AND HONEY.

Observation of the latest methods of packing fruit will convince one of the benefit of packing honey in the same careful way. Apples are put in boxes lined with paper, and many are wrapped with paper, packed in tiers, and counted. This tiering and counting makes it necessary to sort very carefully as to the size and shape of each apple. This does away with all facing, and is the only just way of packing for the trade.

Fruit-dealers are the largest handlers of honey, and the honey producer who grades and packs with equal care will not be forgotten when honey is wanted. We will get around to wrapping our comb honey before long, I believe; and by having a definite limit to the weight, color, and filling of each comb in a grade we shall get an even pack and put out a product so that the retailer can feel assured of a profit. The piling into a barrel of all sizes of apples, ill-shaped ones with fine smooth ones, is bound to go, and the same is true of the packing of comb honey. There should not be over ten per cent variation in the combs (color, weight, and filling considered) in a given shipping grade.

If you buy second-hand cases for comb honey, you should sandpaper them thoroughly, and even then they should not be used for No. 1 grades. A second-hand case of honey looks as if it had been packed a long time, and does not invite the buyer.

CONVERSATIONS WITH DOOLITTLE

AT BORODINO, NEW YORK.

ARTIFICIAL INCREASE.

"What have you there in that box, Mr. Doolittle? Ah! I see—combs of honey."

"Yes. Some of the weaker colonies are short of stores during the period of scarcity we always have in this locality between apple-bloom and white clover, so I am looking after these and setting in frames of honey where I find those in need."

"But I should think *that* colony had enough. It has as much as five or six pounds, I should say."

"Probably it has; but for its best prosperity it should have twice that, so I will set in this frame, which has about six pounds in it."

"But that will give the colony from twelve to fourteen pounds, I should say. Isn't that too much? Is there no danger of keeping the queen restricted when there is so much honey in the hive?"

"Not at this time of the year. It will be fully two weeks before clover will give any nectar, and there is no other nectar-producing flora here unless the few trees of black locust should give the bees a living ten days from now. If you will come over again two weeks hence you will see that the bees in this hive will have all but three or four pounds of that honey turned into brood, and that, together with what they have now, will make a good colony for the clover harvest; while, did they not have more than the six pounds they had before I gave this frame, they would be slow at brood-rearing for fear of starvation, and thus the chance from such a colony would not be the best for a good yield of clover honey. Allow me to say that the turning of honey into bees at this season of the year pays the best of any thing I know of."

"I presume you are right. But what I wish to talk about is this: I want a moderate increase of bees this year, and at the same time obtain as much section honey as possible. Now, how would you make swarms, or the desired increase, if your business were such that you could not be at home during the hours in which bees naturally issue or swarm?"

"I suppose you have your hives and sections all ready to use?"

"No. I thought it would be time enough to make them when I knew how many I wanted."

"Then the first thing for you to do is to get these ready. I do this work during the winter."

"But how do you know you will want any supplies that early?"

"I expect to keep bees year after year, and so I prepare during the leisure of winter; and if any thing should happen so that I do not come out in spring with as many colonies as I expected, the prepared supplies will be ready when I do need them."

"Well, I will go at mine as soon as I get home. But what would you do for increase if you were in my place?"

"The way I would do is this: About the time natural swarms may be expected to issue, and the hives have become full of bees and brood, a hive is filled with frames of empty combs and placed on the stand of one of the populous colonies we desire to make swarm, and all of the sections are taken off the colony to be so treated and placed on the new hive; then all the bees are shaken and brushed off their combs of brood and honey, in front of this prepared hive, into which they will run as fast as they are shaken and brushed off."

"But suppose you had no frames of comb?"

"Then I would use frames filled with comb foundation."

"Would not frames having a starter of foundation work just as well?"

"No; for in this case too much drone comb would be built, on account of the bees not being prepared for comb-building; and by the time they became fully prepared, the queen, not having any place for depositing her eggs, would have stopped laying pretty much or entirely, and so comb-building would go on too rapidly for the queen to catch up, and in such cases mostly drone comb is built."

"I see. But how long have you done this?"

"Thirty-five years or such a matter, and it has always been a success. You will note that this colony is ready for business as soon as the honey harvest comes, as they have the queen, *all* of the bees (not a part, as in natural swarming), and the partly filled sections, all in readiness for work."

"That looks good. But what becomes of the beeless combs of brood?"

"Previous to this, nuclei have been formed so that I have plenty of laying queens to use as I need them, so I now take all the combs of brood, except one, arranging them in the hive the bees were shaken out of, and carry them to the stand of another colony which is ready to manipulate at this time. I next take the frame of brood which was left out and go to one of the nuclei, taking out the frame having the laying queen upon it, and put the frame of brood in its place. I now take the frame I have removed from the nucleus, bees, queen, and all, and set it in the place left vacant for it when arranging the combs of brood, which is better next to one side of the hive. Now I put on the sections, and, having all complete, I move the colony to a new stand a rod or two away, and set the prepared hive in its place. Thus I have a young laying queen and enough of the bees to protect her, together with a hive filled with combs of brood, and the most of the field bees from the removed colony. In a very few days these colonies will enter the sections, during the very best work at producing section honey."

"But I have no nuclei prepared. Would a frame with bees and queen from a weak colony do as well?

"Exactly, for I have used them thus when I desired more than I had provided nuclei for. You will note that the loss of field bees from the removed colony stops the swarming impulse. In about a week this colony will have so regained its loss that the bees are ready to work in the sections again. You will see that, by using this plan, the colonies are *all* kept as strong in numbers as is possible, and yet keep down the swarming fever; and that is just what we wish if we would succeed in producing section honey to the best advantage."

GENERAL CORRESPONDENCE

IS THERE A NON-SWARMING RACE OF BLACK BEES?

The Climatic Conditions of Europe, and how they Affect the Swarming Problem; the Influence of Large Hives.

BY C. P. DADANT.

[The Dadants, of Hamilton, Ill., have for many years been advocates of large hives. They adopted the Langstroth frame, Quinby size, 18½x11¼ inches, ten frames to the hive. They have for many years back run almost exclusively for extracted honey; and as the Quinby frame is a little large to extract from, they use a shallow extracting-frame of the same length as the brood-frame, but only 6½ inches deep. With this hive and their system of management they have been reducing swarming down to approximately two per cent a year, and apparently have no difficulty in accomplishing this result with any strain of bees.

Many years ago the late Charles Dadant began writing a series of articles for the European journals, in which he advocated the Dadant-Quinby hive above described. He met with considerable opposition from the old-fashioned bee keepers, who still stuck to immovable combs, or what we would call, in this country, box hives or straw skeps. In the mean time Dadant's Langstroth's revised work in English, French, and Russian, has been spreading the gospel of large hives over all Europe. So successful were the Dadants in the advocacy of a large hive and system that it came into very extensive use among modern bee-keepers. Out of this has since grown throughout Europe the use of large hives.

In the discussion that occurred in our May 1st issue, page 269, Mr. Kramer held that the bee-keepers of Switzerland were able to control swarming because they had a non-swarming strain of bees. In our footnote we somewhat questioned whether this control of swarming was not rather due to the fact that the Swiss were using large hives or "chests," and running for extracted honey. We appealed to Mr. C. P. Dadant, of the well-known firm of Dadant & Son, and the reviser of the above-mentioned work, for further particulars, and here is his reply.—ED.]

Mr. Editor:—I have your letter asking me for an opinion on the above question as discussed in the article in the May 1st number of GLEANINGS, p. 269, by Dr. C. C. Miller and by Mr. Kramer and others in Switzerland as to the breeds of bees that swarm least.

I am very free to say that I do not believe there has been any special characteristic bred into any race of bees by artificial selection thus far. Practical bee culture by the late advanced methods is too new to have secured such results. In the breeding of domestic animals we usually control both parents. In the breeding of bees we have only a very limited control of the male. Changes and improvements are, therefore, slower than in other stock. A few years ago it was thought by many that a race of bees had been bred with longer tongues, but it was readily ascertained that no positive progress had yet been made. I do not wish to imply that no progress *will be made*, for I believe in evolution, and also that the cultivation of tendencies by human help is bound, sooner or later, to cause changes in any desired direction in animals as well as in plants. But we must not be too sanguine, and think that we can work a sudden reform in conditions that have taken centuries to form.

I do not believe that there is a marked difference between the common bee and the Italian in the propensity to swarm. We have bred both races, as well as the hybrids, and find very little difference if any.

It is well to say, however, that experiences differ as to the comparative qualities of the two races, and it is quite possible that those differences are due to the character of the bees that are native in the countries where the test is made. Our Swiss friends, Mr. Ed. Bertrand in the lead, have often asserted that the Italian bees were inferior to their common bees, and have advanced the theory that each country has the bee which is best suited to its climate and flora. This is in the line of the Darwinian idea of "natural selection" and the "survival of the fittest." These things were called theories once; but the older we get, the more evidences we see to prove that they are cold facts.

America did not have the honey-bee. The Indians called it "the white man's fly." Therefore we were in good position to make a selection from different sources, and the results have been different in different locations. Might it not be that we have simply struck different conditions, and that one race is better in some States and another in others?

The Swiss and the French are succeeding in preventing swarming. They are following the Dadant ideas, and are succeeding even better than the Dadants. This is a positive fact. I have on my desk, with a view of writing a criticism of it, an article which has appeared in several French publications, in which the writer speaks of the absence of swarms as a very general occurrence in the use of the large movable-frame hive, and laments it as a defect, under the plea that the apiaries will diminish in size. So it would appear to be quite common to see several summers without a swarm. I ascribe this absence of swarms to three causes, but do not accept as a cause the special breed of bees. To my mind the absence of swarming in modern European methods is due, first, to the large hives; second, to the production of extracted honey; third, to the milder climate of Europe.

1. The large hives are quite uniformly adopted in Switzerland, France, Italy, Belgium, etc. A very lively fight was made in the bee-journals of those countries some forty years ago by my father, as your readers already know, in favor of the movable-frame hives as against the straw skep and the ẽke hives, which were all of very diminutive sizes. When the fight was won, as it was sure to be, in favor of the new methods and the movable frames, many took the large hives. As it happened, the DeLayens hive, brought forward at the same time or shortly afterward, was also a very large hive. So the majority of practical bee-keepers in those countries use very large hives.

2. The production of extracted honey has not met the same difficulties in Europe that it has found in America. The old-time bee-keepers were producers of strained honey, rendered in such a way as not to alter its capacity to granulate. So the Europeans do not have to make a fight in order to sell granulated honey. If there is a demand for it at all, over there, it is acceptable without melting it. Here, thousands of our producers have taken it for granted that they can not educate the consumers, and they go to a great deal of trouble to melt their honey before putting it on the market. The result is a discouraging prospect for the producer of extracted honey;

while across the Atlantic, extracted honey sells for about the same price as comb honey, if it sells at all. So, of course, extracted-honey production is the rule. You would be astonished if you could read the many testimonials I have received to the great advantages of the large hives and honey-extractor, from bee-keepers of the Old World.

3. The climate of Central Europe has none of the extremes of heat and cold of our United States. Swarming is for that reason much more readily prevented. Neither do they have the excesses of swarming that I have seen here, in natural circumstances, for that same reason, even with hives of reduced size.

I do not believe that it is desirable to produce races without propensity for swarming. In a natural condition this is the only method by which nature can propagate the race. The aim of our producers should be to place their bees in the conditions that will make life most endurable to the bees of the hives, and they will thus have the minimum of swarms. But with small hives and the production of comb honey in small sections, there is sure to be a large percentage of swarming.

It has lately been said by several writers that the difference between extracted honey and comb honey in number of pounds produced has formerly been overestimated. They forget that they used to produce comb honey with but very narrow strips of foundation, or none at all, while nowadays nearly every one uses full sheets. This is bound to make a difference in results. But the more foundation you use, the nearer you get to the conditions that make extracted honey profitable.

Hamilton, Ill.

HOW TO HIVE A SWARM AUTOMATICALLY.

BY CHAS. E. ADAMS.

Last spring, about the middle of May, one of my colonies prepared to swarm. It was not convenient for me to be at home to attend to it, so my wits were set to work to devise a way to make the bees hive themselves. First I clipped both wings of the queen off quite short so that she could only crawl. Next I set the hive containing the colony on a stand about 18 inches high. Then I got an empty hive with frames of foundation and set the same beside the old hive as closely as possible, but directly on the ground, and arranged a slanting board to make it very easy for the queen to crawl up into the empty hive. Then I went away to my work, with bright hopes for the success of the plan, and I was not disappointed; for on arriving home the following night I found this queen and her community safely hived.

Now, if this method can be successfully worked in a fair percentage of trials it suggests some desirable possibilities; for instance, if it were desired to get more bees with the swarm the new hive could be raised to a level with the old at noontime, when many bees were afield, and the old hive be turned around or taken away. In my case the old colony was taken to a new stand, and the new swarm put in its place. I got a yield of honey from both colonies.

STOPPING ROBBING BY TURNING THE HIVE OF ROBBERS AROUND.

A case of robbing was stopped by a plan I have never seen mentioned, although I got the idea from the plan given in GLEANINGS, of changing places of the robbers with the robbed. This plan seemed to me to be a little too much, fearing it might result in both colonies becoming robbers, so I did what I could to protect the robbed colony and then turned the hive of the robbers completely around. In a very short time all was peaceful again.

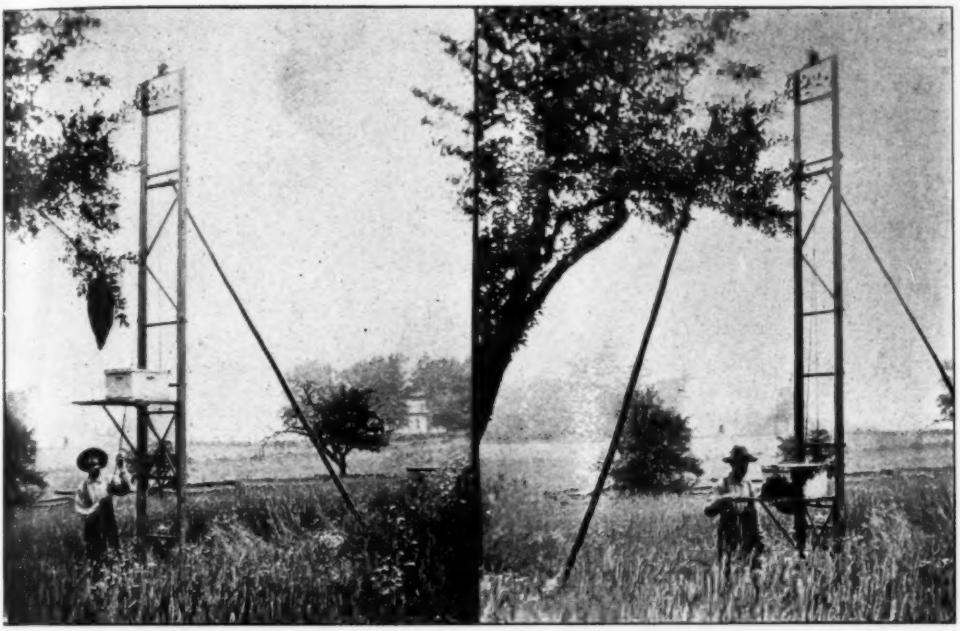
In connection with this robber case an odd incident took place. Of course the bees of the robber colony were confused by having the entrance turned about, so I was watching to see how they behaved. There was an old box standing on end within a few inches of the entrance to the hive in its reversed position — the box containing rags that had been used for winter packing. There was quite a wide crack in the box next to the hive, and I noticed that bees would go in at this crack and run out again. I could not tell where they came from, as I could not trace them to any hive, but concluded that the robbers were having their turn at being robbed. The nearest I can come to describing the actions of these bees is to say that they danced in and out of the box like a lot of delighted children. The next day a little swarm of bees very accommodatingly alighted on a small elm in the yard near this box, and the mystery was explained.

Exeter, N. H.

[These experiments are interesting as well as valuable. It would be quite feasible to hive a swarm on the plan here described; and the beauty of it is, it requires no special machinery, tools, and other appliances.

The scheme of thwarting robbers is also good; but perhaps some of the readers do not know how to go about it to determine *which* colony or colonies are doing the robbing. Take a little common white flour and spray it on the bees that are coming out of the robbed hive; then quickly rush around to the other hives in the yard and see where the floured bees are going in. The plan will work a little better if some one will sprinkle the flour at the entrance of the robbed colony while another person is taking a quick glance at the entrances of *all* the hives. As a general thing, one colony, if robbing has just started, will be responsible for all the mischief. If robbing once *gets well under way*, and the colony is overpowered, there will in all probability be more than one colony involved in the stealing business. Sometimes the whole apiary will get into a bad way. See answer to E. D. Townsend in this issue.—ED.]

OUR Caucasians are a little ahead in brood. Indeed, our black races did not seem to neglect their brood when chilly or bad weather comes on, like the Italians.



GUMBERT'S APPARATUS FOR HIVING SWARMS WITHOUT CLIMBING TREES.

HIVING SWARMS.

How to Avoid Climbing Trees.

BY M. GUMBERT.

If I am on hand when a swarm issues I place a queen-trap on the hive and catch the queen; remove the parent colony and place an empty hive in place of the old one, and put the trap with the queen on front of the empty hive. The bees miss the queen and return to the old stand, and the work is done. I can leave the swarm there or move it to another location. If it is a prime swarm, I always put a drone-guard over the entrance to the hive to keep the bees from absconding, leaving it on three or four days, or until they start to work. If I fail to catch the queen, and the swarm settles on a tree, I hive the bees with what I call a bee-ladder. This ladder is 18 feet high. It rests on a plank 8 feet long, and is firmly braced by a pole with wire loop at the lower end, through which to drive a stake. Inside this ladder are grooves, and a frame is made to slide up and down easily. A rope fastened to this frame goes up over a pulley at the top, and down again where it is fastened to the ladder below. When a swarm settles I set the ladder up just beneath it; place a hive on the frame, and draw it up to the swarm and fasten it there. I shake a few bees off in front of the hive with a pole so that they start going in and keep on, then shaking them off until they are all off the limb. I then let the hive down slowly by means of the rope, and drive all the bees in.

This ladder is very easily let down and moved to another location. Sometimes when I see where a swarm is going to settle I get the ladder there in place, and every thing ready before the bees are all clustered. Sometimes another swarm will come and settle in the same place before the first ones are all in the hive. I then carry it away, when I am ready for the next one. I have used this plan for fifteen or twenty years.

In hiving after-swarms I always give a comb of unsealed brood instead of a drone-guard. This plan will be of little benefit to experienced bee-keepers, but it is very convenient for beginners and for any persons keeping a few bees.

Ohl, Pa., March 17.

[It is desirable to have an apiary located where there are low trees or plenty of shrubbery. Where this is the case a swarm can usually be taken without any ladder-climbing.—ED.]

EVERGREEN TREES PLANTED TO AFFORD A CLUSTERING-PLACE FOR SWARMS.

How to Catch Virgin Queens by Means of Perforated Zinc.

BY E. L. KIMBALL.

The enclosed views were taken at J. Kimball's apiary—Ozonic Ridge apiary, as we call it—located five miles from Duluth, Minn. Fig. 1 shows a swarm in a small spruce-tree, and the hive prepared to receive it. Fig. 2 is a view of the same taken immediately after the swarm had been shaken from the tree. The tree is the largest of ten small evergreens—balsam, spruce, and pine—that my father planted within a few rods of the apiary for the express purpose of affording

FIG. 1.—A SWARM CONVENIENTLY CLUSTERED FOR EASY HIVING.—FIG. 2.

an attractive clustering-place for issuing swarms. Perhaps nine-tenths of all our swarms that have formed a cluster have clustered in these ten evergreens. This particular tree is a favorite with the bees, while, with the exception of one after-swarm, no swarm has ever clustered on a willow or on two mountain-ash trees near by.

The drone-guard at the entrance and the queen-excluder on top of the hive were used on this occasion for two reasons: First, we were hiving the swarm in supers filled with empty extracting-frames. Second, we had discovered that the colony's three-year-old mother-queen was dead, and that there were several virgin queens with the swarm. These we desired to save, for the colony had not swarmed once during the life of its mother-queen, and each year had surprised us with the rapidity with which it built up in the spring and the rapidity with which its supers were filled during the honey-flow. A very few minutes after the swarm had been shaken, it was possible to pick up and cage, one at a time, the virgin queens as they were vainly trying to enter the hive through the zinc. Four daughters of our choice queen were thus secured. Later the supers containing the swarm were placed on top of the brood-nest on the old stand, and the virgin queens, except the one in the brood-nest, were placed in nuclei.

Duluth, Minn.

SELF-HIVED SWARMS.

Some Curious Instances of Bees in the Walls of Buildings.

BY W. A. PRYAL.

The experience of Mr. Frank C. Pellett, page 1318, Nov. 1, 1908, brings to mind several occasions when swarms came to my apiary and took possession of empty hives in which I had noticed bees in greater or less numbers for a week or more previously. The first case was over thirty years ago, when I had some discarded Harbison hives stored in the loft of the barn. How the busy little insects knew the hives were there I do not know, though I suppose they had been prying about every nook and corner from which the smell of bees, honey, or wax emanated. They must have made their way through a knot-hole or crack in the ordinary rough siding, and taken possession of the hive. I saw them in some of the hives some days before, but did not think any thing of it at the time, for up to that time I never had any self-hived bees. I bored a few holes on a level where the entrance of the hive would come, and moved the colony up to the wall so the bees could have easy ingress and egress. This colony did well, and remained in the loft until we raised the building to make room for a larger barn.

In years gone by I have had several swarms take possession of empty hives containing comb right in the apiary. In one instance a swarm came to the apiary in February. The hive was a small experimental one made of ⅜ inch lumber, and it was set aside to go in the hive boneyard or wood-pile. One day, about one o'clock, in the spring, a year ago, I happened to be in my workshop when I heard a commotion as of bees

A SELF-HIVED SWARM.

swarming close to the door. Looking out I saw a big swarm taking possession of a discarded three-quarter Langstroth hive that stood on top of another hive. Having a folding pocket camera handy I sprung it on the lively scene with the result shown in the accompanying half-tone engraving. Later the bees were shaken into a regular dovetailed Langstroth hive, and they became an industrious colony.

The cases above referred to are but two of several that came under my observation right in my apiary. There is a large house in our neighborhood in which bees repeatedly domiciled themselves, much to the discomfort of the human inmates. While the bees found their quarters warm and comfortable, those in the house probably suffered some on cold days because they could not start a fire in the grate. Smoke would not ascend the flue. A bricklayer was called, and dismantled the chimney under difficulty, until the colony was reached and removed.

A small cottage on a place adjoining ours has been a favorite abode for bees for something over twenty years. The rustic would be removed, the colony destroyed, and the boards replaced. In a year or two another swarm of bees would come and squat on or in the same place. It

seemed the bees found an opening in a chink under the eaves. Recently I saw this house, and the rustic is not replaced any more, so the bees could not find it a suitable quarter to nest in.

For years a colony of bees held sway in one of the flying buttresses of old St. Joseph's Church, Berkeley, near here. The bees had their entrance within a yard or so of the church entrance, and I never heard of the congregation being molested by the busy honey-gatherers.

A little over a year ago one of my neighbors in the Claremont district, just over the hill from our place, asked me to come to his place and see what he could do to banish a colony of bees that had taken possession of his attic. I found that for years he had been the victim of the bees' industry. They got in between the shingles and the plaster. The case was one of the most extraordinary I ever heard of. Several years, during hot weather, the honey melted and ran down even into the rooms below. One year, a mass of comb, honey, and bees was dislodged by the heat and went tobogging to the eaves. The plaster was ruined. Buckets, pails, and tubs were set to catch the dripping honey. When I visited the place the ceiling where this colony was located had been replastered. The swarm had been removed, and its place of ingress on the outside stopped.

The pestiverous colony that I was called to advise about was lodged in the immense wooden cornice, and was to be reached only from within the attic. One of the owner's sons had made an opening, and was trying to capture or dislodge the bees. He procured a smoker, and had tried to drive the bees away or kill them with sulphur fumes, but to no purpose. He was advised by some one connected with the University of California to give them their quietus by means of carbon bisulphid. Liberal applications failed to accomplish the desired result, owing, I suppose, to the fumes too easily finding an outlet at the bottom of the cornice. To ascertain the size of the colony I took a hand-saw and used it as a knife to cut the comb loose. Sheets of comb eight inches wide and over twenty-seven inches long were taken out. The honey was of the finest color and flavor But it was impossible to get those bees out—they crawled off into all sorts of corners. Every hole that could be found in the shingles and in the cornice had been plugged, but still the bees found an entrance. I advised the young man to let the bees remain until late in winter, when there would be fewer of them, and but little honey to make a muss as in the spring or summer, and then he could probably easily rout them from their stronghold.

Oakland, Cal.

FOUL BROOD AND BLACK BROOD.

How to Know Them.

BY E. R. ROOT.

During the warm part of the year we receive on the average from two to three samples of suspected brood a week from various parts of the country. These we are always glad to examine and render a report on, free of charge, *providing* that the specimens are sent in a stout wooden or tin box; but no ointment or cigar box must be used as it destroys the odor of the comb.

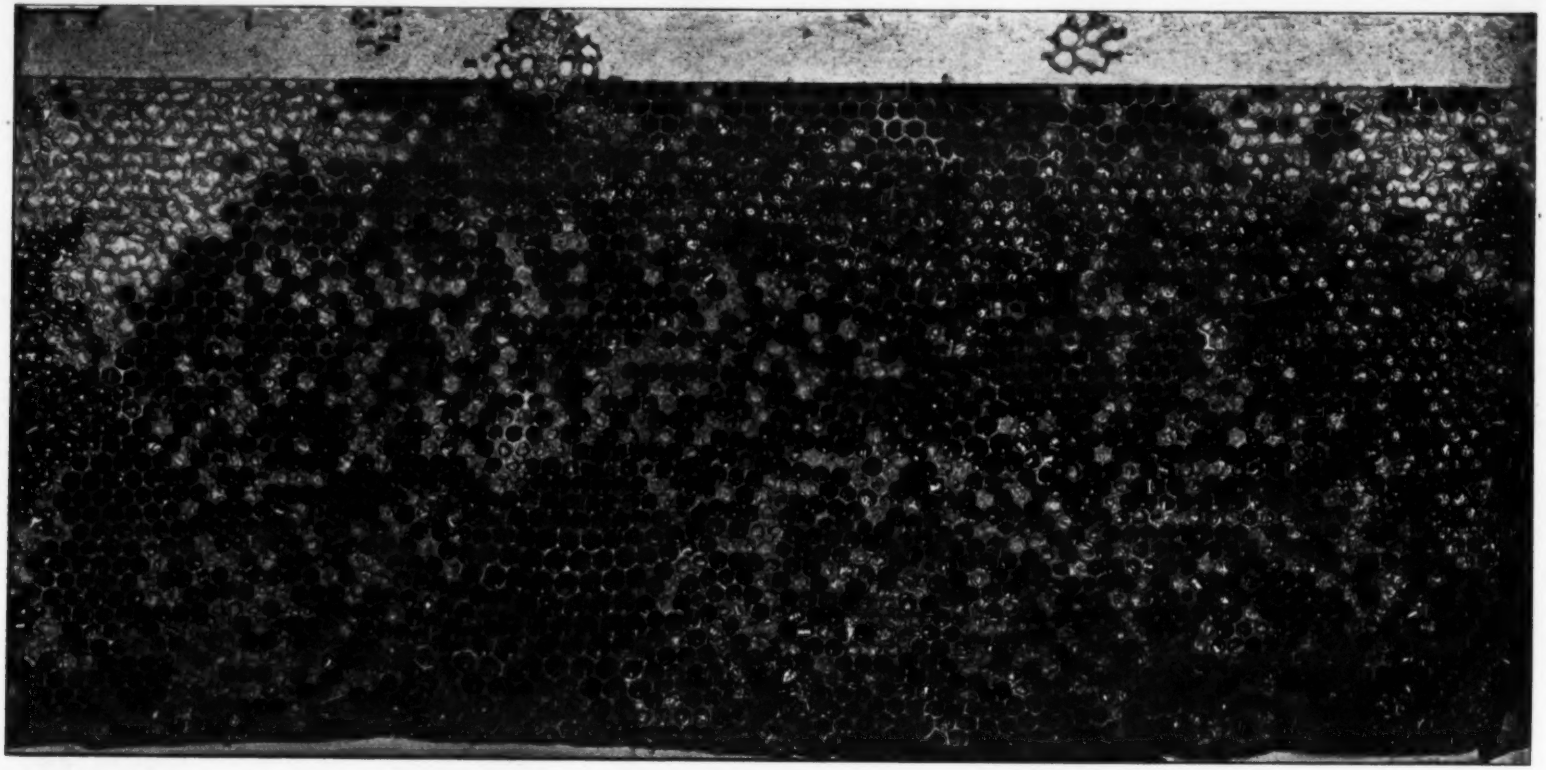
Last fall we received a remarkably characteristic sample—a whole comb, in fact, showing an advanced stage of the disease. So perfect was it that we took a photo of it and here it is. But no photograph or engraving can adequately represent the various shades of color, grading from that of a brown coffee berry to a bright yellow; so the reader will have to imagine this part from description.

The specimen here shown is typical of an advanced stage of the disease, because it shows sunken and perforated capped cells and those uncapped with the dead larvæ lying on one side. While we usually expect the larvæ to die in the case of old-fashioned or American foul brood after sealing, yet when the disease is very bad in the comb we find dead larvæ in almost all stages of growth, showing all gradations of colors, from a bright yellow to a deep dark brown. Just about as the larva dies it takes on a bright yellow. This turns darker and darker, showing next the color of the coffee we drink with milk in it. The shade deepens until it is of the color of strong coffee without milk. At this stage the larva loses its form, sinking down into a shapeless mass; and if a toothpick be introduced into this mass the dead matter will adhere to it, roping out some two or three inches like spittle. This has given rise to the term *ropy* foul brood, as distinguished from the type known as black brood, or, as the Bureau of Entomology has it, European foul brood.

The cappings of the cells of the old-fashioned foul brood are very apt to be sunken. Somewhere over the surface there may be a small hole as if it had been pricked with a pin. This hole may be very minute; but as it enlarges it is apt to be angular, with ragged edges. It would appear that the bees make an opening in the cells, knowing that something is wrong, and the mess within is so foul that they give it up in disgust. It would appear, also, that some of the bees go back, tear away the opening a little more, and then quit the job. By examining the engraving one may see the various sizes of openings in the cappings. Among the sunken cells and perforated ones will be found others that are perfectly normal. On opening up the same we find healthy grubs within.

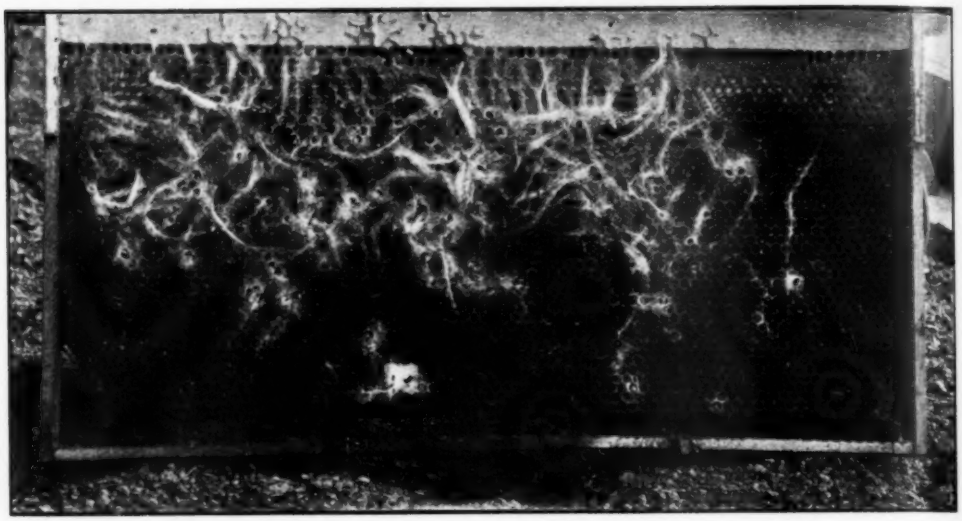
It is very seldom that we find *all* the cells in a comb affected, even in an advanced stage. In the one before us, probably a tenth of them were in a healthy condition, and from them would emerge in the course of time healthy normal bees. Foul brood, then, seems to attack a comb in spots. This is due possibly to the fact that young larvæ are fed with the pap or honey containing the disease germs, and others may be accidentally fed by other bees a food that is in no way affected, and consequently they mature perfectly normal bees.

When the combs are badly diseased, like the one in the engraving, it will give off a strong odor like that of a glue-pot, such as one gets while the glue is boiling, except that it is worse. The stench is almost identical with that which emanates from a lot of dead bees piled up in a damp place in hot weather. Several times our men have been led to suppose there was foul brood in the yard by the peculiar odor, when examina-



A COMB OF OLD FASHIONED (AMERICAN) FOUL BROOD IN AN ADVANCED STAGE.

This is an excellen specimen of a comb badly affected with the disease. In this stage fhere are cells sealed and unsealed containing dead grub. Notice particularly the ragged perforations of some of the capped cells. Notice also the unevenness of the cappings, some sunken, some flat, and others rounding, and probably containing healthy larvæ.



COMBS INFESTED BY THE LESSER WAX-MOTH.

This photograph was sent us by George W. Tebbs, Hespeler, Ontario, Canada, who wrote that the frame was taken from a hive which had originarally contained an Italian colony, but which had been empty during the winter.

tion showed that a lot of dead bees that had died during the winter were in front of the entrance.

But we have heard bee-keepers say that they do not regard the odor from foul brood as so foul as the books have stated. This all depends on the kind of nose one has. Some odors are sickening to one, but endurable to another. This is particularly true of the odor that emanates from foul brood.

When one finds a comb like the one shown in the engraving on the preceding page the colony is pretty badly diseased; and it is also probable that other hives in the immediate vicinity are likewise affected; because when a case is so far advanced as this, the probabilities are that several colonies in the yard are involved; and it would be well to make a general search through the apiary. Colonies with entrances pointing in the same direction, and near by, will be almost sure to show some diseased cells Possibly one will not find more than three or four affected cells, and those in only one comb, for the disease has only started in that hive. Sometimes one will not be able to find a single cell containing a dead larva. In one case, where we could plainly smell foul brood, we could not find any dead specimen in any cell until we had looked over the combs for something like half an hour, opening up here and there a cell, until we finally located a dead larva whose tissue would rope out as we have before explained. But as a general thing, before there is any pronounced odor a comb will be quite badly diseased. In that case one is not likely to notice it, even at the entrance. Something will depend on the direction of the wind, if any, and whether the bees are ventilating the hive.

BLACK BROOD.

So much for the old-fashioned ordinary foul brood. Black brood is much more difficult to diagnose. It may look very much like ordinary dead brood or what is called "pickled" brood or "starved" brood. If the reader will imagine a slightly yeasty or sour smell combined with a faint suggestion of foul brood he will get an idea of the characteristic smell. But there is lacking the strong foul smell that one gets from ordinary foul brood that has been so often likened to that which we get from an ordinary glue-pot. Most of the larvæ have died before sealing, in the early stages; while in the case of the old-fashioned foul brood in the other stages, most of it dies after sealing. The dead larvæ do not lose their shape or form, neither does the matter rope except to a very slight extent.

In the case of either black or foul brood, when one finds a comb affected like the one shown in the illustration he may assume, as a matter of course, that the disease has gained a pretty good start in his yard. If one hive is badly affected there are liable to be a good many other grouped around it that will show more or less of the disease. If foul or black brood is in the vicinity one will do well to keep tab on every inch of his brood-combs, going over them every few days, especially when the bees are running short of stores, either before or after the main honey-flow. It is possible that one may catch the disease at its very inception. If he sees a cell or two that are ragged and sunken in one hive he had better go over his whole yard; but make these examinations when bees are not robbing. If it is during the robbing season, examine the hives during a misty rain or at night.

The greatest means of spreading the disease is by robbing. In spite of all we can do or say in our literature, many and many a bee-keeper will be careless. He will attempt to transfer when the bees are inclined to rob; to open up hives, scatter the honey on his clothes, on the ground, and on his tools. When working over a diseased colony one should be careful not to soil his

clothes; and if any honey is daubed on, it should be sponged off. If there should be any honey scattered on the ground, several pailfuls of water should be poured over the place to wash out any trace of sweet. The hands should always be thoroughly washed, and if any tools are daubed with honey or foul-broody matter they should be scalded or held for a moment over a flame.

In the limits of this article it will not be necessary to go over the method of cure, as that is fully given in all of our standard text-books and in our government bulletins. In this connection, perhaps it will be well to remind our readers that the Bureau of Entomology, Department of Agriculture, Washington, D. C., is prepared to examine and report on any specimen of diseased brood that may be sent in. This service is free, and, what is more, the government is willing to offer information on how to cure. The Department is endeavoring to get information regarding foul-brood districts in every part of the United States, not for the purpose of publication but that it may keep in touch with the localities.

We are willing to help our readers at any time; but we would suggest that they will get more reliable diagnoses if they will send direct to the Bureau of Entomology, for the reason that all specimens of doubtful brood will be further subjected to microscopic and bacteriological tests. We do not feel ourselves competent to decide on doubtful specimens. As a matter of fact, no one but a bacteriologist can make a positive determination in such cases.

WHY THE BEES DIDN'T PAY.

The Let-alone Policy.

BY DANA F. DOW.

I notice that one of your Massachusetts correspondents, who possibly wears blue "specs," complains that in New England he finds nothing but "discouraged failures" in bee-keeping.

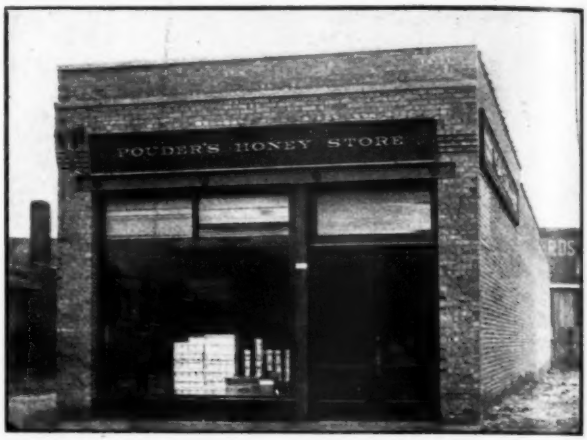
Well, Mr. Editor, if you could see the hives of some of these so-called bee-keepers you would not be at all surprised — clumsy, antiquated affairs such as Noah used in his bee-cellar in the ark. Many of these hives have not been opened for twenty years or more, and the brood-combs

TRANSFERRING BROOD-COMB FROM A BEE-TREE.

[After the tree is felled, a saw-cut is made above and below the hollow part containing the bees, and enough of the wood split away to expose the combs. Every little while some one writes of a new scheme for holding pieces of transferred comb in frames; but it is doubtful whether any of the different forms of bent wires, etc., are as good as cheap string. When a piece of comb is transferred large enough to fill the frame, a long piece of string may be wound around the comb, frame and all; or rubber bands may be used. But if small pieces of comb are to be transferred, as from a bee-tree, for instance, short pieces of string may be arranged on a board as in the illustration above, an empty frame placed over them, and enough pieces of brood comb cut to fill it. The ends of the string may then be brought together over the top, and tied. When string is used, no harm is done if it is not removed, for the bees soon do that.—ED.]

are so old, misshapen, and crooked that you almost need a crowbar in order to pry one out. Brood-rearing is confined to a space about as large as your hand in the lower part of the combs, while the rest of the space is clogged with masses of honey so old that it is fairly petrified—the poor bees can never use it, for nothing short of a hatchet will make any impression on it.

Then there is a popular notion that bees require little or no attention, and that the bee keeper has done his whole duty when he puts on a super of sections each year. This let-alone plan is the worst possible policy where bee forage is meager, and, consequently, where the bees need to be coaxed to do their best. It reminds me of the sick man who, when the doctor asked him if he bathed regularly, replied, "Yes, doctor, regularly—every Fourth of July!"



POUDER'S NEW BEE-SUPPLY AND HONEY HOUSE AT 859 MASSACHUSETTS AVENUE, INDIANAPOLIS, IND.

Many of these bee-keepers (?) leave the super on all winter, giving the hives no protection whatever, so that with the cold empty space above them it is a wonder that the bees survive at all.

Then, again, hives are never examined and brood-combs taken out. The bee-keeper knows nothing of what is going on in the hives; and if the bees were originally Italians they have long ago degenerated into blacks. Some of these men never saw a queen, and do not know what one looks like, because the hives have descended from father to son, even to the third and fourth generation. Speak to such a man about buying pure Italian queens and he would have "heart failure."

No wonder foul brood flourishes and colonies are eaten up by mice and moths. It is conditions like these that discourage the men who have fine strains of Italians. We can not get queens purely mated on account of so many black drones.

Of course, Eastern Massachusetts is far different from other sections of the country where bees have access to hundreds of acres of clover, alfalfa, buckwheat, basswood, and other bee-forage. This is a poor honey country, and we humbly take off our hats to the men who are getting 200 or more pounds of comb honey per colony in favorable localities. To tell the truth, we are too modest to intrude our own "small potatoes" when the professionals are securing such large returns in other parts of the country. If we get 50 pounds of comb honey per colony we are doing fairly well; but there are some men who have produced 95 and even 150 pounds on their best colony; but the latter was a phenomenal yield.

Massachusetts bee-keepers should cheer up, discard their antiquated hives, put their bees in modern hives, to get the most out of our short honey-flows; give winter protection, use up-to-date methods, and then they will get fair results.

Ipswich, Mass.

[You will find some of the conditions you describe in many other States as well as in Massachusetts. Such methods anywhere bring discredit to the industry.—ED.]

POUDER'S NEW WAREHOUSE.

BY WALTER S. POUDER.

Four car-lines pass my door—Columbia Avenue line; Brightwood line; East Tenth Street line, and Eighteenth Street line. I am located seven blocks east of the postoffice, or three blocks further out than my old location.

My new storeroom is 20 feet front and 120 deep, with concrete basement 10 feet deep. I have a freight elevator of two-ton capacity, electric power, making the trip in 25 seconds, and stopping automatically at either floor. In unloading a car of goods we use an incline from the sidewalk where goods slide down into the basement. Walls are enameled white; maple floor; lighting and ventilating are superb. The elevator in descending trips a switch which turns on electric lights; and as it comes up it trips the lights out again. I have every modern convenience for liquefying and bottling honey—water, gas, and electricity. Some of my friends here refer to the place as "the Bee Palace."

Indianapolis, Ind.

HOW YOUNG AS WELL AS OLD BEES GO TO THE FIELDS.

How the Intelligence of New Honey in the Fields is Communicated to the Inmates of the Hive; an Interesting and Valuable Series of Observations.

BY THE LATE E. L. PRATT.

[The following article was written only two or three weeks before the death of Mr. Pratt. This contribution to our present-day literature and science we regard as exceptionally interesting as well as valuable. In a measure it upsets some of our old theories, and likewise, in a measure, it confirms some of the work of other writers.

It was Mr. Pratt's habit, when he had leisure, to sit and watch his bees by the hour. This habit continued over a period of many years, and gave him a direct knowledge of the domestic economy of the hive possessed by but very few.

When the members of the National convention asked him to make a series of observations to determine the facts regarding some disputed points, no better man from training and experience could have been selected; and we think our readers will agree with us that it is fortunate that he happened to reduce his findings to writings before he died.—ED.]

During the National convention at Harrisburg, I, among some others, was directed to observe closely the action of colonies storing honey in supers, with a view to ascertaining, if possible, just how the bees manage this important part of their domestic economy.

Having given considerable time and some study to the subject assigned to me for investigation I am now ready to make a report.*

My observations have all been made with fairly strong colonies in normal condition; and it is my belief that natural conditions prevailed during all the time of making my observations.

In view of my findings I am forced to believe that, during a heavy honey-flow, bees of all the flying ages, even down to the nurse stage, are sent afield in as large numbers as can be spared from the brood during the warmer hours of the day. If cool, damp, lowering, or windy, however, the field bees carry on only the work of honey-getting, while the youngsters stay in the hive to keep up the temperature. It is the young bees only that store away the honey in the supers, under normal conditions. The field bees bring the raw nectar to the hive and deposit it in the combs of the brood-chamber wherever cells are available. Some is given to the young bees, to be sure (more to set them on the right track to the field, I believe, than for the purpose of storing); but it is mainly placed in the cells of the brood-combs to be later removed, when partially ripe, by young bees, to the store-combs. If the combs below are filled or partially occupied, the partly cured honey naturally goes into the super.

Some little ripening of honey progresses during the day by the heat of the sun and the bees; but the greater part of the ripening is done at night by vigorous and continuous fanning by the entire colony. I have visited my bees night after night to ascertain the amount of time needed to reduce honey to keeping consistency; but the time varies with the amount brought in during a given day. At times the fanning is continued until morning, while at other times it may stop at midnight or an hour or two later. I am convinced that the raw nectar is mainly placed directly in the brood-combs; for, go at any hour you may to a super, and only young bees will be found at work there, excepting, of course, the few old workers on the "gluing job"—they may be seen at all times. The young bees are constantly lifting the partially ripe honey from the brood-combs up into the super, and the field bees are constantly refilling the cells in the brood-chamber emptied by the young bees. The nectar gathered to-day is lifted as partially ripe honey into the super the next or perhaps the following day (this I demonstrated by coloring materials on several different occasions). Many beekeepers have noted how much thinner the honey is in the brood-combs than that found in the extracting-combs during any given flow.

During quite cool nights, few if any bees remain in the super much after midnight; but they reoccupy the super as soon as the sun is again high, which goes to show that the warmth of all the bees is needed in ripening the nectar below, and that the new honey above is at keeping consistency, or it would not be neglected. The heat of the sun and the constant fanning of the ventilators reduce the honey to that thick ripe consistency, after which it is gradually conveyed to the store combs; and, when thoroughly ripe, it is sealed by the wax-workers and middle-aged bees. When once stored, honey is not handled again by the bees, but is allowed to thicken in open cells.

To aid our bees in ripening the extracted honey, therefore, a black "paroid" roofing to draw the heat of the sun would seem an advantage in cooler climates. To hold the heat and to prevent its escape at night, a deep telescoping cover with black covering is an aid to bees in comb-honey production.

When sweets are available, those first finding it do not deposit it. They use it as a signal to the other bees, feeding it right and left to all at hand as they rush over the combs. If the flow of the sweet keeps up, every member of the colony is given a taste; then depositing begins, and will continue until the end of the flow from that given source. Slow colonies may be started on a flow by shaking some of the new honey of other colonies over its combs.

Swarthmore, Pa., Feb. 22, 1909.

* Where I use the word "super" will apply just as well to "store comb" or combs at the sides of a brood-nest. The same may apply also to the upper part of any or all the brood-combs, where bees naturally place their ripe stores, gradually crowding the brood downward until it finally occupies but a small portion of the combs at the lower parts or corners. I use the term "super" in the text as being convenient and well understood by all. The correct term is store comb.

PRACTICAL INSTRUCTIONS FOR BEGINNERS.

What to Do Just Preceding the Honey-Flow; the Importance of Having Plenty of Stores to Last Until the Main Honey-Flow Begins.

BY E. D. TOWNSEND.

Immediately following fruit-bloom there is an interval of about three weeks before the clover-flow, when there will probably be no honey coming in in the northern States; and at the beginning of this interval, providing the weather has been favorable, so that the bees could work on the fruit-bloom, the hives are heavy with brood. If the beginner will remember that, during the three weeks preceding the honey-flow from clover, there will be more brood in the combs than at any other time in the year, and that nearly the whole force of workers that gather the surplus-honey crop are reared during the six weeks preceding the clover season, he will better understand what I shall have to say a little later.

The conditions favorable to brood-rearing during the six weeks preceding the clover-flow are very important; but I think I am safe in saying that not half the colonies in the country are provided with these favorable conditions. Every good colony should have at least 12 pounds of honey in the frames for breeding purposes at the end of fruit-bloom. Colonies medium in size, that is, those light in bees and brood, may need

less. To tell how much honey there is, there is no sure way other than to lift out the combs and make an examination. It can be depended upon that a brood-comb spaced 1⅜ inches from center to center will contain, when sealed, fully 5 pounds of stores. A part of these stores will consist of bee-bread, so if there are three combs of stores in the hives containing the best colonies at the close of fruit-bloom, such colonies will be in the ideal condition that we so much desire, and there will be nothing further to do with them until the time arrives for putting on the supers. One comb of stores may carry a weak colony over this period, and two combs will be sufficient for medium colonies. The ten-frame hives prove to be of advantage here; for, although there is room for plenty of stores, enough space is left for brood-rearing besides.

It is probably true that, in a colony of bees in normal condition, the workers do not become field bees until they are seventeen days old. By "normal condition" here is meant a colony having enough field bees to keep the nurse bees (those under seventeen days old), busy taking care of the nectar that is brought in, building comb, etc. It often happens in the clover belt, especially in the northern States, that the honey season begins before many of the colonies reach this normal condition, especially if the winter was long and severe. In such cases many of the bees must go to the field in search of nectar long before they are seventeen days old; and as soon as the colonies get started in earnest they become normal, because enough of the bees have been forced into the field through necessity to make a balanced force, so to speak.

Since the old bees that winter over die off in April and May, a large number of young bees must be reared during the spring months to replace this loss. This is the reason why there must be an abundance of stores at all times during this heavy breeding season. The ideal way is to feed all colonies that are short of stores in the fall, and if, for any reason, some of the colonies become short of stores during the spring months, combs of honey saved for this purpose should be given. If no such combs of honey are available, the Doolittle or Alexander feeders may be used. For spring feeding the grade of honey is not so important, and it should be mixed with an equal amount of water by weight to make the syrup. For the fall feeding, only granulated sugar should be used, and the syrup should consist of two parts of sugar to one of water by weight. With plenty of stores in the hives, as mentioned first, no spring stimulative feeding will be found necessary. The beginner especially should avoid conditions which make it necessary to feed for stimulative purposes or even the exchanging of combs to equalize the stores. Such spring "fussing" should not be attempted by the novice, and it is a question whether even the old hand at the business will gain much by such management, or whether the colonies will be in better condition than they would be if provided with plenty of stores in the fall to last until the opening of the main honey-flow the following season.

THE DANGER OF ROBBING IN THE SPRING; HOW TO STOP IT AND HOW NOT TO DO IT.

The danger of robbing is enough to discourage any one from opening the hives during the spring months except when it is absolutely necessary during that part of the year. The apiarist himself is responsible for nine-tenths of the robbing. In the first place, poor methods of wintering result in weak colonies which are not able to defend themselves against the stronger ones. Beginners, not knowing about this, are apt to handle colonies indiscriminately during the spring months; and if the ever-ready robbers get a taste of the stores of honey, robbing will be started. The weak colony that was being handled is in poor condition to defend the stores, even if the bees had a disposition to do so. Our beginner may not have noticed that the colony was being robbed until there was a great uproar at the entrance of that particular hive; and at this point he is likely to do the most unwise thing possible; that is, to move the colony to a cellar or honey-house with the idea of saving it. It would have been much better to let the robbing go on until night, when all would be quiet, and then the robbed colony could be set over a moderately strong one, which would be abundantly able to defend the stores. There is apt to be trouble with the robbers, even when this is done, as many of them will stay over night in the hive that was being robbed, and will try to make an attack the next morning. If this weak colony had been placed over another weak one, the probability is that both would be robbed the next morning, and for this reason it should be placed over a fairly good colony, as stated before.

After the weak colony has been placed over a strong one, an empty hive-body, as near like it as possible, should be set on the old bottom-board, and the cover that formerly was on the weak colony put over it. Most of the robbers will be attracted to this place the next morning, and they will rush into the empty hive instead of attacking some nearby colony, thus starting the robbing all over again.

With a good deal of satisfaction we sometimes exchange the places of the two colonies—that is, the one doing the robbing and the one being robbed; but the plan does not always work. Only last spring we tried this with two of our colonies. The one that was being robbed had enough bees so they should have defended themselves, but for some reason they did not. We exchanged the places of the two colonies, but it was not very long before the bees of the strong colony found out the change and began carrying the honey from the weak colony back to their own hive now on the new stand. The beginner should not attempt to adopt this plan of stopping robbing, for often those with considerable experience can not distinguish which colony is doing the mischief.

It is a good plan to contract the entrances in the spring to conform to the size of the colonies. In this way, not only the heat is retained but the bees in the weak colonies are usually able to defend themselves. When the entrance-blocks have been thus adjusted they should not be disturbed until some of the strong colonies need larger openings.

If the beginner would go into a bee yard and find robbing going on, his first thought would be to contract the entrances of the weak colonies. This might be the wise thing to do; but robber

are in the air that have secured a taste of honey from some source, and they are watching for a chance to secure more. If any one were to light a smoker and go into the yard with the air full of robbers, such robbers would very likely be attracted, especially if the guards at the entrances of the weak colonies were smoked so that the blocks could be adjusted. Therefore, if any change must be made with such weak colonies it should be made at night, when the bees are through flying for the day, so that all will be quiet the next morning.

Of course, when the honey season opens later on, such trouble with robbing quickly disappears, for bees do not rob each other to any extent when they can get nectar from natural sources.

Remus, Mich.

[Elsewhere we have commented on the value of this article—in fact, the whole series of articles written by Mr. Townsend. We desire to call attention to the advice that the colonies be put in prime condition *in the fall;* that is, they should be supplied with an abundance of stores so they will not require to be fed or equalized the following spring. A large amount of testimony was brought to bear on this matter some six months ago; and it was surprising to see how so many veterans agreed on the proposition. It was urged to feed in the spring if you *have* to; but get into the habit of feeding enough in the fall, if the bees are not already supplied, so they will have enough and to spare until the main honey-flow next season.

We believe it is good policy sometimes to allow robbers to finish up their job when once they get agoing on a weak colony; but some late experience has suggested to us a much better policy; and that is, to take the robbed colony and put it down cellar and keep it there for two days. On the stand from which the colony is removed we place a robber-trap, consisting of a regular bee-hive like those used in the bee-yard, having a bee-escape leading into the entrance—that is, so placed that bees can go in but not out of the hive. This robber-trap should be placed on the stand just as soon as the other hive is taken away. In the course of an hour it will have caught all the robbers, and the yard will be just as quiet as if nothing had happened; for experience shows there are but few bees involved in the robbing business, and those mostly from one colony. Take the trapped robbers and put them down cellar, or, better still, carry them to an outyard, then put the robbed colony on the top of another strong colony, and allow them to work out their own salvation.

The trouble with ordinary robbing is that, when it once gets started in a yard, the apiarist is almost sure to be annoyed day after day *unless* he catches them in a trap, as here explained, and carries them to an outyard where the conditions and environments are different. In some cases we advise brimstoning the robbers outright. If they are "old offenders" the apiarist will be money ahead to do so..

The prevention of robbing is better than the cure, and the beginner can not be too careful in following the above very wise directions. Weak colonies with plenty of stores in hives with large entraneces are perpetual temptations to bees inclined to rob.—ED.]

BUCKWHEAT-GROWING.

Some Questions Answered in Regard to it.

BY H. B. HARRINGTON.

So many letters with questions have come to me since my article on page 317 appeared that I thought best to answer them all through GLEANINGS. We have raised four varieties — the old black, the gray, the silverhull, and the Japanese. The berry of the black is large and rough, and the hull thick and hard. The flour is dark-colored, but made very good cakes and biscuits when I was a boy. The straw is large with long branches.

The gray (or calico) buckwheat has still larger straw, and we have harvested our largest yields of grain from this variety. The first crop of this variety we raised from less than one peck of seed sown broadcast by hand on one acre of very rich river-bottom land. We harvested 42 bushels of very fine grain.

The silverhull grows with a smaller straw; the berry grows nearer to the stalk in compact tufts, or bunches; the hull is thin and the flour light-colored. We like to raise it because it looks so pretty as it comes from the thrashing-machine.

The Japanese is a quick grower, bound to get ripe, no matter how late it is sown. It grows more like the silverhull, and the flour is also very light-colored.

The most buckwheat we ever harvested from one acre was 45 bushels. That is good for Ohio, but not much of a crop for Northern Michigan or Wisconsin.

One can raise a big crop of buckwheat after plowing under a crop of clover, but the roller must be used to pack the ground and make a fine seed-bed for the young plants. There is no land too rich or too poor to raise buckwheat. On rich land, for early sowing, one peck per acre is enough; on thin poor land two or three pecks should be sown. On the rich land the gray variety branches out wonderfully. Late in the season more seed is necessary. As late as August 1, silverhull or Japanese might require four pecks per acre. We should expect a five-peck seeding as early as July 15, on any decent land, to lodge, fall down, and go to nothing.

Phosphate stiffens buckwheat straw. It is not so apt to lodge where commercial fertilizer is used.

Our best crops of honey have been gathered from the varieties with the larger straw, but we have had good crops from all varieties.

Of course, plant potatoes in June or as late as the first of July. If rye is to be plowed under, let it get as large a growth as possible. I prefer to plant in the first half of June.

The American farmer must learn to feed his land better. Nature has fitted rye to grow in the fall, winter, and early spring, when no land should be left bare to wash, leach, and waste. Potato-fields, corn-stubble, and all vacant fields that have been tilled should be sown to rye in the fall. It pays big, even if the land is plowed in the latter part of May for a summer crop; but it will pay a bee-keeper much better to let it stand and get a big growth then plow under for buckwheat. For the best possible honey

crop I would sow buckwheat July 4; for the best possible grain crop, sow the 15th or 18th of July.

Medina, O.

HEADS OF GRAIN

FROM DIFFERENT FIELDS

MOVING SHORT DISTANCE RESULTED IN PRACTICALLY NO LOSS.

About the beginning of the past winter I wrote to the editor and also to Mr. G. M. Doolittle, asking their advice about moving my bees 100 yards. Mr. Root advised moving them some two miles or more and letting them remain eight or ten weeks as the most practical way to avoid a big loss of bees. Mr. Doolittle advised me to move them at the beginning of a cold rough spell of weather, right from the old stand to the new. I felt satisfied that, if I would reduce the loss of bees to a minimum, I must adopt the plan as advised by Mr. Root; but being pressed for time, and the roads being very bad, I decided to take Mr. Doolittle's advice. So about the first cold spell we had in February I moved the bees to their new stands in the apple orchard.

In a few days the weather was warm and the bees were in full flight; and, my! how they did return to the old stands! and they kept up this returning (I say *returning* because nearly all of them seemed to go back to the new stands at about sundown) for six or eight days, when every thing seemed to quiet down, and I believe my bees are in as good condition as they would have been had they not been moved at all.

One hive that stood out by itself I shook after moving to the new stand; but I don't think it lessened the number of returning bees, as some seem to think. In moving 50 colonies I do not think I lost more than one or two thousand bees.

Should I ever wish to move them a short distance again I would not hesitate a moment to move them any distance in winter, and I believe it would work any time if honey is not coming in.

I failed to state at the outset that Doolittle advised leaving a board over the entrance for a few days after moving, which I did.

Woffard, S. C., April 25. S. CHEATHAM.

ADDITIONAL QUESTIONS ON MOVING BEES IN CAR LOTS.

What is the best way to arrange the bees in a car? How many colonies make an average carload? No doubt the weight of the colony would count, but possibly the capacity of the car would be greater as regards weight than space for this purpose; so the only question would be that of how many colonies an ordinary car would hold.

As Mr. M. A. Gill, of Longmont, has just shipped a carload, no doubt you could obtain from him a practical article covering all these points, and one that would be interesting reading even to those who do not expect to ship bees in that way, as Mr. G. has the knack of explaining the little points that many overlook, but are the very ones most important; and one who has seen him load honey in cars would know he would load bees just the right way. W. HICKOX.

Fort Collins, Colo., Apr. 30.

[You will probably find the information you seek, in regard to the matter of moving bees, editorially on p. 260 of May 1st GLEANINGS. Between 300 and 400 colonies can be accommodated in a car; but when we moved 500 colonies to Cuba we used nearly two cars. Five hundred in one car, unless it were a very large one, would be a little crowded. It is quite important to leave an aisle down through the car so that the man who accompanies the bees can get at any one colony to give it the needed attention. There should also be room enough between the hives on a vertical line so that there will be a free circulation of air, and at the same time allow the man to spray the screen of any colony that is becoming too hot or clustering too tightly on the wire cloth.

We have written Mr. Gill for a report of his experience in moving a car of bees.—ED.]

COLONIES MOVED 1600 MILES BY RAIL IN WINTER.

I have just reached Northern Wisconsin with 26 colonies of bees, having come from New Mexico, a distance of 1600 miles. Before I started, the bees had a good fly almost every day till I screened the entrances, Jan. 4. They were put in a car on Jan. 5, arrived at Bruce Jan. 19, and were taken out Jan. 23, hauled 11 miles, and put in the cellar after reversing the bottom-boards from the ⅜ bee-space to a 2-inch space (Miller style of bottom-board). They had no two-inch rim with screen at top. The weather, till I got as far as Amarilla, Texas, was warm enough for bees to fly; and I wished, after I started, that I had put screens over the top; but it was cool enough from Amarilla till I arrived at Bruce, Wis. They certainly had a trying time. Bedsprings, etc., were over the hives, and the car would throw them up and down and jar the hives terribly. When I reversed the bottom-boards after they were put in the cellar some had a pint of dead bees; but most of them had very few. They were all alive and appeared all right.

Carlsbad, N. M. S. D. CLARK.

FOUR YEARS AMONG THE BEES; SEE FRONT COVER OF LAST ISSUE.

In 1905 I purchased my first colony of bees, and I have been increasing ever since. At present I have 35 colonies. On the cover of last issue is a reproduction from a photograph of my apiary, which I have given the name of Cloverdale. I run mostly for extracted honey. This I bottle in one-pound bottles, and sell retail in nearby towns and villages. In 1908 I harvested over one ton of extracted honey besides some comb honey from 22 colonies which I had in the spring. Those large hives in the background are chaff-packed. I use the method of tiering up the brood above the queen-excluder.

Honey in this locality is mostly gathered from alsike and white clover. The bees were gathering pollen this year about the middle of February. HOWARD A. TIBBEN.

Jarrettown, Pa.

THE BEST WAY TO BUILD UP A WEAK GOLDEN COLONY.

I have what I think is a valuable queen (Golden) purchased of E. L. Pratt last summer. I got her safely introduced, and she built up a powerful colony by fall, and went into winter quarters in excellent condition, but came out this spring with not more than a pint of bees. Now, as I am practically only a beginner I should like to know the best plan for me to take to build this colony up again. Would you please advise me? White clover is coming on by leaps and bounds, and plenty of it too.

THE PLAN OF CLOSING HIVES IN WINTER WITH WIRE CLOTH A FAILURE.

Perhaps you would like to hear of some of our experiments with the wire-cloth vestibules. My neighbor had 19 colonies of bees last fall, and, against my advice, he closed these colonies up with wire vestibules. He doesn't take GLEANINGS, and, as a result, his bee-sheds look lonely and deserted, 14 out of 19 colonies having died. I might have made the same mistake had I not read up on this subject in GLEANINGS. See the difference? EDWARD HARDEN.

Hyndman, Pa., April 26.

[If there are other colonies of good strength in the yard, pick out a frame of hatching brood from one of the strongest and give it to this weak colony. In four or five days more give another frame from another hive. A very strong colony can often spare a little brood like this without very much detriment to itself; but be sure not to give the weakling too many frames of hatching brood in too short a space of time.

If the weak colony is the only one in the yard, contract it down to the smallest space the bees can occupy. If it be short of stores, feed a little syrup two or three times a week at night, and at the same time contract the entrance down to the space one or two bees can pass at a time.—ED.]

WIRE-CLOTH SEPARATORS; THE ADVANTAGE OF DRONE COMBS FOR EXTRACTING.

I used five supers with wire-cloth separators last year, and secured some of the finest honey I ever had. One colony on which I used them finished a super of thirty-two 4×5 sections, fastening only one section to separators, and in this one the foundation broke down and swung against the separator. This was when the honey-flow was at its height. I put a super on when the honey-flow began to wane, and they built comb on each side of the separators, besides drawing foundation out also.

Aside from this I had no trouble with combs being attached to separators. The sections were well filled, cases of 20 sections weighing 19 to 19½ lbs. net. I have used drone comb for extracting, and like it very much. The honey leaves the combs much more easily than from worker comb. CHAS B. ALLEN.

Central Square, N. Y.

[All the reports we have thus far received, where wire-cloth separators have been tested, have shown exceedingly gratifying results. The one serious drawback, namely, expense, in many cases has been more than met by the extra quality of the honey secured; for if one can, by an added outlay in the cost of separators, shove his comb honey up one or two notches in the grading No. 1 and fancy, he is thereby enabled to make anywhere from one to two cents more on each section. If the one separator will accommodate four sections, this will make a gain of from four to eight cents in one season.

Like every thing else of this kind that promises much, one should try them out on only a small scale; and then if preliminary tests are satisfactory he can make a larger outlay.

The statement regarding the advantage of drone comb for extracting, to the effect that such combs will extract more easily by reason of the larger cells, is one on which we should like to get the opinion of some of our extensive liquid-honey producers. The objection to drone comb, of course, is the danger of rearing a lot of drone brood and drones, under some conditions, at least, unless one keeps a very close tab on every inch of surface of comb in the extracting-supers, and this is impracticable in the height of the season. To rear drones in any quantity, except for the purpose of rearing queens, is exceedingly wasteful, because it effects a material reduction in the output of the colony, to say nothing about the wear and tear and loss of time on the part of the bees that ought to be otherwise engaged.—ED.]

AN EXTRACTOR WITH REMOVABLE COMB-POCKETS.

Several years ago I had a Cowan honey-extractor made for me with the comb-pockets so made that I could take them out for the purpose of cleaning. They were hung something like the old-fashioned barn-doors. There was a square hole in the lower hinge, which fitted over a square lug on the sprockets, so that all the pockets could turn or be reversed at the same time. The hole in the upper hinge was round, so that the pocket would swing easily from side to side.

When I wished to remove a pocket I simply lifted it up off the square lug on the sprocket, and then let it down until the upper hinge was disengaged, when I could lift it right out and clean it. Three years ago I sold all of my bees, but this extractor was in good order at that time, and always gave good satisfaction.

Los Angeles, Cal. JOHN NIPPERT.

[To make an extractor with removable pockets increases the expense and complication somewhat and at the same time decreases the strength of the moving parts. While such an extractor stood up well for you, it probably would not do as well for others.—ED.]

LOSS OF BEES DUE TO TANGLE-FOOT HONEY.

There has been a great loss of bees all around me. They dwindle and die with plenty of honey in the hive. There is no brood, and the combs are clean and nice. The honey seems to be made from what we call bee-weed, or tangle foot. It is granulated. I have been feeding my bees on sugar syrup, although they have plenty of honey. W. S. BEAN.

Falkville, Ala., Dec. 28.

[We should like to inquire whether any one else in Alabama or elsewhere has had the same experience.—ED.]

OUR HOMES

BY A. I. ROOT

The Spirit of the Lord is upon me, because he hath appointed me to preach the gospel to the poor; he hath sent me to heal the broken-hearted, to preach deliverance to the captives, and recovering of sight to the blind, to set at liberty them that are bruised. —LUKE 4:18.

But whoso shall offend one of these little ones which believe in me, it were better for him that a millstone were hanged about his neck, and that he were drowned in the depths of the sea.—MATT. 18:6.

To introduce my theme to-day, let me quote as follows from GLEANINGS for June 1, 1906, p. 755:

Years ago some men were drawing heavy flagging for sidewalks and road-crossings. They unloaded the great flat stones; and to make them easier to handle they propped them up at an angle with a piece of wood two or three feet long. Some of these sticks of wood were set at such an angle that almost a touch might cause them to slide along the smooth stone and so let it fall. One day in coming home, and when quite a piece away from these stones, I noticed some children making mud pies, or amusing themselves in a similar way in the shade of one of those heavy pieces of flagging. The back of one of the children was close to one of those pieces of wood. He might have easily loosened the stick and let the flagging down, making a terrible deadfall for the thoughtless prattlers. I thought at first it was our own children; and as I started on a run, the blood almost froze in my veins to think what might happen. As I came near, however, I discovered they were not *our* children at all. I stopped running, and came pretty near saying, "Thank God!" Had I said so it would have meant I thanked God it was my neighbor's children and not my own that were in such danger. Was that loving my neighbor as myself? Not much. This incident often occurs to me, reminding me of how hard a matter it is to fulfill that command—"Thou shalt love thy neighbor as thyself."

The above incident often comes into my mind. At the time it happened, if I remember correctly, I sat down and considered the depravity and selfishness of my heart. I was not quite so bad, it is true, as the man who uttered the prayer, "O Lord, I thank thee that I am not as other men are." A good friend of mine protested when I used the above incident as an illustration. He said it is every parent's duty to look after his own children. He can not be expected to feel the interest (or perhaps a better word would be *responsibility*) in other children that he feels for his own. But that does not excuse the matter. If we are true followers of the Lord Jesus Christ we ought to feel at least *almost* as much anxiety when our neighbor's children are in danger as we would if they were our own. When God called to Cain, away back in the garden of Eden, and asked him where his brother was, he impudently replied, "Am I my brother's keeper?" and whenever you hear any one giving utterance to a sentiment like that, you may be sure that he is not a Christian, or at least when he speaks he is not full of the spirit of him who came into the world "to preach deliverance to the captives, to give sight to the blind, and to set at liberty them that are bruised." Jesus knew no kindred or nationality. When reminded at one time that his mother and brothers and sisters were outside wanting to speak to him he said, as he stretched forth his hand toward his disciples, "Behold my mother and my brethren! For whosoever shall do the will of my Father which is in heaven, the same is my brother and sister and mother."

Well, friends, it was a task for me to get into a frame of mind where I could feel as much anxious solicitude for the safety of my neighbor's children as for my own. While I was hastening to the spot where that great propped-up slab of flagging was standing, I thought the three children playing under it were Ernest and his two sisters, Maud and Constance. The smallest of the three went to rise up, and her back was then just touching that prop with it top resting against the smooth surface of that soft flagging. A very little force—in fact, something not more than a touch of the hand—might cause that prop to slip and let that heavy stone (that was selected because there was to be a crossing there for heavy wagons) drop on the three innocent prattlers. I shall always remember that involuntary change in my feelings when I got near enough to see that none of the three were our own children. By the way, friends, if I am right about it, nothing but the influences of the Holy Spirit can so enlighten our consciences that we shall feel the same anxious love for humanity everywhere that we do for our own kindred and our own offspring.

Now, it was a hard task for me to climb up out of self and near to God, and also to feel even just as anxious for other children—in fact, all the children in that neighborhood and the town and the country round about—as for my own. God heard my prayer and answered it. It was in answer to this prayer that I was induced to go into the jail and to starting mission Sunday-schools round about Medina. The older readers will remember what I told them about over thirty years ago. Now for the task that lies before us.

If I interpret God's word and his wishes aright, it is not only the little prattlers that are growing up in our town and in the towns of the several States of our nation, but it is the little prattlers likewise that are away across the ocean on the other side of the globe. Just lately China, with *its 400,000,000 people*, has been swinging open her doors, tearing down her wall of prejudice, and welcoming Christianity and the messengers who are bringing tidings of "peace on earth and good will to men." In that discussion about the crippled feet of the Chinese women we got a glimpse of it. Most of our readers know more or less about how China has been cursed by the opium traffic. I do not know whether the Anti-saloon League has made any progress or got a foothold in China or not; but I am pretty sure they do not have much of what we call here "local option." They are getting hold of the idea, thank God. But when the best people of China began to demand the privilege of deciding by vote or something similar whether the opium traffic should go on or not, they were told by Christian England (I hope that is not true, friends) that they could not stop the opium traffic, no matter how big a majority they had against it. Yes, it has been said that Christian England, *at the mouth of the cannon*, demanded that the traffic go on; that the Chinese people *must* continue using opium because there was "money in it"—that is, money in it for the domineering English nation. But just of late England has let up a little. I think she has turned the cannon around in another direction; and I have been told, too, that she does not like to hear people talk about that *particular* cannon and the opium traffic. China is now waking up, thank God, and the prospect is that she will take hold, or is already taking hold, of every thing belong-

ing to civilization, just as Japan astonished the world only a few years ago—we might almost say a few *months* ago.

In many parts of China wonderful strides are being made, not only in breaking up the opium traffic, but in spreading the gospel, starting schools, and giving the people not only sufficient food but better food. I am told that the rich and fertile ground where they have for years been growing poppies is now being used to grow vegetables and fruits and good wholesome food for the children. Just think of it—exchanging the stupefying, soul-killing opium for that which gives health and life and energy! May God be praised for the change that is coming and has come. Let us now go back a minute to that heavy flagstone with the children playing under its sheltering shade.

It was a task for me to get to the point where I felt as anxious about the children that were separated from our own by only a picket-fence as for my own. It is a rather big jump, friends, is it not, to take in the little boys and girls belonging to that 400,000,000 of people on the other side of the globe; but that is what God calls on us to do. "Go ye into all the world, and preach the gospel." With that same gospel, go the schools and churches, asylums for the afflicted, and every thing that upholds righteousness and discourages iniquity. While in San Francisco I was permitted by the kindness of a friend to go through the Chinese part of the city. I saw the women and girls and some of the Chinese babies. They were just as bright and pretty as the little children and babies in your own home or mine; and yet that missionary woman told us that little boys and girls only three or four years of age were learning to smoke cigarettes that the great American tobacco trust is distributing there free of charge. Five States in our own country have ruled out the sale and manufacture of cigarettes. In order to make up for this loss of their industry, the American tobacco trust has turned its attention to foreign lands, where they bulldoze the officials and carry things on with a high hand just because they have millions of money to back up their plans and undertakings. This good woman who told us about it, I am informed by my sister, Mrs. Gray, is employed to make a missionary tour of the whole world, and will let us know here at home what is being done.

Well, it is not only cigarettes that they are pushing among these innocent people—just as innocent and happy as that little group I have told you about under the stone flagging. It is not only the manufacturers of cigarettes but the *brewers* of the United States, who have had their traffic suddenly stopped to the extent of shutting up several thousand saloons in the last hundred days. These brewers and manufacturers of American beer *have also* got their eyes on China, and are teaching the Chinese (I suppose boys and girls as well as men and women) to drink American beer. You may remember that in an address before a brewers' convention the speaker said something to this effect:

"Gentlemen, nickels invested now in giving the boys a drink will bring us good round dollars in the future. If we wish our industry to live and thrive we must cultivate the habit with the rising generation."

The above is not the exact language, perhaps, but it is the sentiment. Now that they are cut off from so large a part of the United States they are going to "cultivate the habit" in foreign lands. God forbid; and if the good people of our nation and other Christian nations would unite and demand it, it *would* be forbidden in quick time. If our great warships, that cost toward $20,000,000, could be manned and used in such a way as is indicated in the language of our text, or, in other words, if these great institutions could be used for "deliverance to the captives, and recovering of sight to the blind, and to set at liberty them that are bruised," then we might thank God for our great battle-ships.

I made a clipping of that item I took from the *Union Signal*, about giving away cigarettes in China, and sent it to the heads of some of our missionary societies. In fact, I sent it to quite a number of men high in office who ought to know something about it. The reply has been that it is all true; and some of the letters seem to intimate that the tobacco trust with its millions of capital is almost too much for them. The tone of their letters made me think of the giant Goliath who said, "I defy the armies of Israel this day."* But because he was a giant, of great stature, and of commanding mien, they were all afraid of him until the boy David came on the scene. Then with his staff and five smooth stones out of the brook he fearlessly approached the giant and said, "Thou comest to me with a sword and with a spear and with a shield; but I come to thee in the name of the Lord of hosts, the God of the armies of Israel, whom thou hast defied."

Now, friends, this great tobacco trust with its millions of money is the giant that stands before us. This missionary woman told us how the giant intimidated the missionaries and the helpless people. What shall we do when this great trust defies the powers of the living God? Shall we sit still and wait for some one who has the courage and the faith of the shepherd boy David? God forbid. We have Davids among us now if they can only be awakened and aroused to the needs of the present hour. Who is there who is ready to take his life in his hands, and go forward and meet this great giant that is distributing the cigarettes in China?

OUR FLORIDA HOME DURING THE MIDDLE OF MAY.

The following letter from my neighbor Rood will explain itself:

Mr. Root:—I went and looked over your place, as I had not seen it for some days. I found every thing growing beautifully. The bananas are growing, and look strong and healthy — a very great contrast to the way they looked when the chickens were eating the life out of them. I believe that, if you had a quarter of an acre of banana-plants like those, you could create a real stir with them. They are well manured, and are showing the effect of their good treatment. The mulberries also look fine. I did not cut off the limbs as you suggested, as I had never seen it done, and now they have big vigorous leaves on them, and some fruit, but not very much. Ordinarily they bear in March; but the season was so very strange this year that they are away behind. The grass that Wesley set out in the back yard is now growing well, and I think it will cover the ground before you return. We had over two inches of rain in two days the latter

* We are told, I. Samuel 17: 16, that he said this, not only once, but he came out with his defiance morning and evening for *forty days*.

part of last week. I had noticed a few days before that some of your newly set trees were looking rather sickly, and so I had Wesley go over and cut off the limbs of two of them and water all of them thoroughly. They now look much better. Nearly all of the grass in the front yard is living. I have not had all of the rye cut yet, but perhaps I had better do so soon. I never saw your place look so well before. It ought to be a real beauty this winter. I have but little doubt that you will have more grass when you come down than you will care for—at least until you get your lawn-mower at work.

Dr. Brymer has had a 4½-inch artesian well dug. It is only 480 feet deep, and has a reputed flow of 300 gallons a minute. It is at least a very fine well. My well is watering my land beautifully. My strawberries that otherwise must have died during the long drouth are doing finely.

We are not having such a good honey year as last, but I have been getting a good many barrels during the last few days.

Bradentown, Fla., May 13. E. B. ROOD.

Permit me to explain that some very fine bananas are raised around Bradentown—yes, some of the finest, to my notion, that I ever got hold of. I think it has been stated that more wholesome sustaining food can be grown on a square rod with bananas than any other plant producing food for the human family. Well, bananas must have very rich ground. Like the rhubarb or pieplant they will stand any amount of strong manure. The bananas Mr. Rood mentions were on a plot of ground where I sowed sprouted oats all last winter. The chickens spent a great part of their time every day in digging this ground over and over; and as a consequence it received a very liberal coating indeed of poultry manure, and this fertilizer was most thoroughly worked in. A quarter of an acre of bananas properly managed will bring in quite a lot of money. I believe they usually sell in our Florida markets—that is, choice fruit—for almost as much money as they bring here in the North. Dr. Brymer, who is putting down the new artesian well mentioned, was a York State bee-keeper; but he was so badly afflicted with asthma that he located in Florida about a year ago. He has not only regained his health, but he did some quite successful gardening, even before he put down his artesian well. Three hundred gallons a minute from a 4½-inch pipe, is, if I am correct, something extra fine.

HEALTH NOTES

WHISKY FOR SICK PEOPLE.

If you have been reading up what the great doctors have to say, and have also been keeping track of the report of the tuberculosis convention, you are doubtless well satisfied that whisky and other alcoholic stimulants are *never* of any benefit to consumptives. On the contrary, they are a positive damage, and often the *cause* of the "great white plague." Perhaps they are the greatest indirect cause. Intemperate parents can not give birth to good strong children able to resist tuberculosis and a host of other diseases. Notwithstanding all this recent evidence, our daily papers (and I am afraid some of our home papers) are full of advertisements of whisky for sick people—not only Duffy's malt whisky, but ever so many other kinds, accompanied with testimonials, from *old people*, that are base forgeries. In *McClure's Magazine* for March we have quite an article entitled "Evidence Against Alcohol," by two of the best-posted physicians we have in our land, or perhaps in any other land. Here is what is said of these men, in a footnote.

Professor M. A. Rosanoff is Director of Chemical Laboratories in Clark University, Worcester, Mass., and Dr. A. J. Rosanoff, Second Assistant Physician of Kings Park State Hospital, Long Island, N. Y.

These two doctors have made some exhaustive experiments. Their conclusions are printed in italics, and I am very glad to be able to give most of them here in our journal.

Moderate amounts of alcohol taken with a meal effect a very considerable lowering of the capacity for doing muscular work. The widespread notion that moderate drinking with meals helps a laborer do his work is false.

Moderate drinking retards to a considerable extent the activities of life that are intermediate in complexity between purely muscular and psychical work. The widespread notion that a drink "braces one up," and makes one do such work faster, is false.

Moderate drinking reduces considerably an artisan's efficiency. Its effect is cumulative, and the losses caused by it increase as time goes on. The widespread notion that moderate drinking helps an artisan in his work is false.

Moderate daily drinking reduces considerably the rapidity with which habitual associations of ideas are formed in the mind. The effect of alcohol is cumulative, and increases as time goes on. The notion that alcohol "stimulates" a person to his mental work is surely not corroborated by facts.

Free associations of ideas are affected by moderate daily drinking even more than the simpler habitual associations. The effects of alcohol on free associations of ideas are cumulative.

Ordinary memorizing is greatly retarded under the influence of moderate drinking. This conclusion is entirely corroborated by a set of twenty-seven experiments carried out by A. Smith in 1895.

Throughout the western world, one out of four men admitted to an insane-asylum is brought there by alcohol.

You will notice the above point to the fact that they made careful experiments with people in different walks in life, and the results are the same right through. The use of alcohol and intoxicating liquor is every time, and *always*, and under all circumstances, with all sorts of people, injurious and damaging. Let me now digress a little.

Whatever I may have said in these Health Notes I still practice myself, and recommend to others—either to go, or send for your family physician when you are threatened with any thing that is at all serious. The judgment of the father and mother in any home ought to be sufficient to decide *when* it is best to call in a doctor. But in choosing a doctor for a family physician I would by all means urge finding one who is fully posted and abreast with the times in regard to this matter of "whisky for sick people." During my recent illness I told our good doctor to give me whatever his judgment and experience approved, but not to give me whisky. He laughed, and said that he guessed we would not disagree in that matter. During an early stage of the disease he gave me some tablets that gave such prompt relief I began to fear that they contained morphine. Let me briefly give you a little experience I had some years ago with a morphine remedy. I was away from home, and had a bad attack of dysentery. When neither dieting nor any thing else seemed to be of any avail I went to a druggist for a cholera cure. This cure arrested the trouble, as it always had before, but this time it came right back, and kept coming back. I presume I used the cholera cure several times a day for something like a week; and then I began to be surprised to think I felt so well, and got along so nicely, while I was eating almost nothing, but the demand for my medicine kept coming more frequently. I was on the road to become a morphine fiend, and I stopped right

square off. As I feared it would be, my strength and energy were gone at once. I was unable to work or do any thing; but I kept quiet, and was very careful of my diet until I pulled loose from the morphine appetite. For one or two days the temptation was terribly strong to have just a little bit more of that medicine; but in a week's time, or a little more, I was all over it, and I have never touched any thing containing morphine since. Well, when these new tablets made me feel so easy and comfortable I began to fear it was the old morphine habit coming back; but I was greatly pleased to have the doctor inform me that the tablets contained no opium nor morphine —nor quinine.

When I was quite low with fever I was told (by a good and experienced nurse) I must have an alcohol bath. I suggested wood alcohol as a saving of expense. When told it was poison I maintained that, even if it was poison to *drink*, I was satisfied it was as good as any other for bathing purposes—that is, if alcohol or whisky is of any benefit at all for bathing. After becoming assured that it would refresh and strengthen me I consented to the use of it. Now, at that time I had eaten so little that I was only a bundle of skin and bones. Rolling around in bed so many days had worn off the skin till (so it seemed to me) some of the bones almost threatened to come through. The attendant suggested that an alcohol bath would help the matter, and make me feel refreshed in every way. Well, I do not think I am stubborn or contrary when I tell you that the bath (with the very best alcohol) did not refresh me a particle. In fact, it made the sore places smart, and I did not rest as easy for 24 hours after the alcohol bath. When told I would have to take it every day I rebelled. I had only that one. A bath in pure soft rain water has always refreshed and invigorated me. It did the same before I had my alcohol bath and after I had it, and it has never failed. But the bath with alcohol gave no such refreshing feeling whatever,* and I hope you will excuse me for insisting that the use of whisky for bathing the body is a silly notion—a relic of the age when doctors used to take out a lot of a man's blood to cure him. If he survived, then they said the bleeding was what cured him. If the poor fellow died, then they would tell the relatives that, although they took away a large quantity of blood, even *that* did not save him.

Now, you need not dispute what I have said above, for there are plenty of people to-day who remember this "blood-letting" business. At the present time, thank God, we do our best to give a sick man *more* blood instead of taking away what little he has.

Now to go back to the matter of whisky-bathing.

Whisky-drinking, thank God, is about to be put down and out as a remedy for sick people. I remember my brother telling years ago of a man who got a bottle of whisky to help his rheumatism. He forgot the directions. Perhaps it was written as some of the doctors write them nowadays—so nobody can read them anyhow. He drank the whisky and rubbed the empty bottle on his rheumatic limbs.

By the way, how many can recall incidents where whisky, brandy, and alcohol were sent for to "bathe the patient" when the liquor was really used for some other purpose?

Oh that the doctors in our little towns and big towns could be induced to read that article of ten pages in *McClure's Magazine*, and carry out its plain and obvious teachings!

When I began to convalesce the doctor gave me what he called a tonic. He said I must not object to it because of the port wine that it contained, for it was put in simply to preserve the other remedies. By the way, this grip fever, or, as the doctor said it probably was, partly malarial fever, hung on more or less for several weeks. Well, I feel sure I am not mistaken when I declare that just one spoonful of that port wine aggravated and brought back the disagreeable symptoms of that fever. I tried it again and again, and every time I was satisfied that the effect on myself, at least, was injurious. It is so long since I have touched any thing in the way of alcoholic stimulants that very likely I was unduly sensitive to their effect.

*Mrs. Root submitted to the alcohol bath daily for several days, and her testimony agrees with mine exactly. She says she felt no benefit whatever, while at the same time a bath of pure soft water was invigorating and refreshing.

POULTRY DEPARTMENT

CONDUCTED BY A. I. ROOT.

NOTHING TO DO BUT GATHER THE EGGS.

Just now we are getting from two to three dozen eggs a day from about four dozen laying hens, and we have got these so arranged that there is certainly but very little to do but "gather the eggs." The fowls are kept in an orchard of nearly an acre; in fact, it is the very place where our dandelion cow gave such a lot of milk when feeding on dandelions. The four dozen laying hens, including two males, certainly use a considerable part of the dandelion foliage, and may be they use the buds and blossoms to some extent. At any rate, they are keeping the dandelions down so they are very much behind those outside of the inclosure. Perhaps I should mention right here that we still find dandelions about the best food we can get for cows giving milk, just as it has been for the last three years, and I am at a loss to understand why there is such a complaint about "dandelions overrunning every thing," as we see it talked about in the papers.

To get back to the poultry, as wheat is so high we are feeding just corn and oats. The oats are soaked over night, and so far we find the egg-yield nearly if not quite as good as when we fed so much wheat. About all there is to do besides gathering the eggs is to take care of an occasional sitting hen. If she is promptly shut up the first time we find her on the nest, a confinement of two days usually cures her. We keep corn and soaked oats constantly before the fowls. While speaking of oats, the following card is just at hand:

Mr. Root:—What is your method of sprouting grain for chickens? Do you put it in the ground or in boxes?

Millstone, Md., May 1. J. W. GARRY.

Since my sickness we have not been sprouting oats at all. We simply soak them over night, as I have mentioned. In our Florida home we did all the sprouting in the open ground. The soil there is so light and sandy that when we get a piece of ground cleared of roots and rubbish it is a very easy matter to make a furrow with a hoe. The oats are then sprinkled in quite thoroughly, say half a pint to a rod. With a rake or hoe they are very easily covered up. About three feet from this first furrow make another in the same way, and keep on until you have covered a piece of ground large enough so your hens will not dig it all out before another lot gets sprouted. It takes quite a little patch of ground to keep seventy hens busy and give them all the sprouted oats they need. When we had refuse lettuce from neighbor Rood they rather neglected the oats and let some of them come up a few inches. But they will dig them all up and eat them at any stage. Where you have nice soft ground we consider it rather less trouble to put the oats in as above than to sprout them in boxes which I have described so many times in our back numbers.

THE MAGIC EGG-TESTER.

In our last issue I said I had asked for my money back. In reply I received the following:

Mr. A. I. Root:—It is not the germ nor the lack of it that is causing breeders so much trouble. The difficulty lies in bringing the egg substance up to such a degree of perfection as to produce a strong and healthy chick.

We should like to have you use a tester, setting only "x" and "xx" eggs, and let us know the result of your experiment. We are ready and willing to refund your money when you are thoroughly satisfied that the tester is of no use to you; and if you will follow our directions we know that the refund will never be made. MAGIC EGG-TESTER WORKS.

Buffalo, N. Y., May 10, 1909.

After receiving this I thanked them for their offer, and promised to test a lot of eggs with their tester in an incubator. I am very glad indeed to find them so ready and willing to return the money according to their advertisement.

Later.—I have just tested something over 100 eggs with the Magic egg-tester before putting them in an incubator. These eggs were from one to five days old. The eggs taken out of the nest to-day nearly all showed x and some xx by the egg-tester. As I got d wn toward the bottom of the egg-basket they began to show more x; then 0, and the lighter ones showed 1 and a few 2. The tester, as I have before explained, simply gives the specific gravity, and in testing eggs for the incubator or for any other purpose the machine will enable one to sort out quickly the fresh eggs from those that are several days old. But that is not all it does. Occasionally we find an egg of low specific gravity on the day it is laid. In fact, there is so much difference that you can tell by taking a light egg and a heavy one in the hand one after the other. Now, the egg-tester people say these light eggs are not profitable for raising chickens, and no doubt they are right about it. You might think the small eggs would be the light ones; but with the egg-tester we do not find this to be true. A small egg may be xx the day it is laid; but *aside* from the specific gravity I believe it is generally considered that small eggs are not profitable for raising chickens.

A BEE-ESCAPE FOR CHICKENS.

Mr. A. I. Root:—I notice what you say about a "chicken-escape," and inclose a drawing which I hope will give you my idea. The same method may also be used in making trap nests.

You wonder at Mr. Polk calling "Bob White" a partridge. You will find these provincialisms all over the world. In the part of Ohio where I formerly lived, what the Eastern folks call a "spider" was called a "skillet;" and what is here called a "pail" is there called a "bucket." In my travels in Indiana and Pennsylvania some years ago I often heard the word "hate" used peculiarly. If you asked some one if he had any produce for sale the answer would be, "Not a hate", meaning none at all. Throughout the South, quail are usually called "partridges," and ruffed grouse are called "pheasants." The latter are called "pheasants" over much of the West, but I believe that in Michigan they are called "partridges," as they are in New York and the New England States, where quail are called "quail," as they should be. We have no partridges in this country except the Hungarian, which have been imported much of late, and liberated. The usual weight of quail is about 7 ounces, while ruffed grouse weigh about 24 ounces. E. P. ROBINSON.

Packerville, Ct., April 12.

Accompanying the above letter is a sketch of a little swinging door hinged at its upper edge, to be placed in the poultry-fence. Now, in order to have the fowls find this door and use it, there is an opening in the lower part of the door, like an inverted letter V. The hen puts her head into this opening and pushes a little, and readily goes through. A button on the back side of the door prevents its swinging the other way. I do not see how any thing can be made much simpler. This V-shaped opening should be so it can be made larger or smaller, or else we should have doors with openings of different sizes according to the size and age of chicks. I think that, if such doors are nicely made, and advertised in our poultry-journals, there would be quite a demand for them. If made of light thin lumber they could easily be sent by mail.

SELLING SECRETS, ETC.

I confess that I have felt almost indignant because so many poultry-journals have continued to help along the "secret" business by inserting fraudulent advertisements. A reform, however, in this respect is beginning. See the following, which I clip from the *American Poultry Advocate:*

TESTING OUT UNFERTILE EGGS.

I note in the papers an advertisement relating to incubating eggs, claiming that it is possible to test out the fertile eggs before setting. I have been reading poultry-papers for the past twenty years, and in all of them the claim is ridiculed, and noted as an impossibility, unless the egg is broken. New wrinkles, however, are constantly coming to the front; and may be what was claimed to be an impossibility can now be accomplished. If you know any thing about the advertisement mentioned, please tell me if the party can "make good" if I send the dollar.

Smithtown Bridge, N. Y. A. H. S.

Save your dollar. The party can not "make good," nor can any one else who claims such impossibilities. We greatly regret that the advertisement was admitted to the *Advocate* for a month or two, but it was "fired" as soon as the writer's attention was attracted to it and the claim investigated. We note that some other papers haven't discovered the error yet, and are still carrying the advertisement. It should be stopped, as it is a fraud.

Below is something I have taken the liberty to extract from a private letter from the editor of one of our best poultry-journals:

THE POTTER AND HOGAN SYSTEMS FOR SELECTING LAYING HENS, ETC.

Even at the dollar Potter charges, the price is too high, and the ten dollars Hogan asks is simply outrageous, as the systems are identical and neither new.

I have gotten a little bit tired about this "secret" business. Lately I got *Farm Journal's* book of poultry "secrets," and there is not a single thing in it that has not been published in *Poultry*. I have told all about preserving eggs, about sprouted grain for chicken feed, and about all the other things which are advertised and sold as secrets more than once in my publications, and I think it is going a little too far to sell these to credulous people at from two to *ten times* as much as we charge

Continued on page 30.